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HYGEIA

THE HEALTH MAGAZINE

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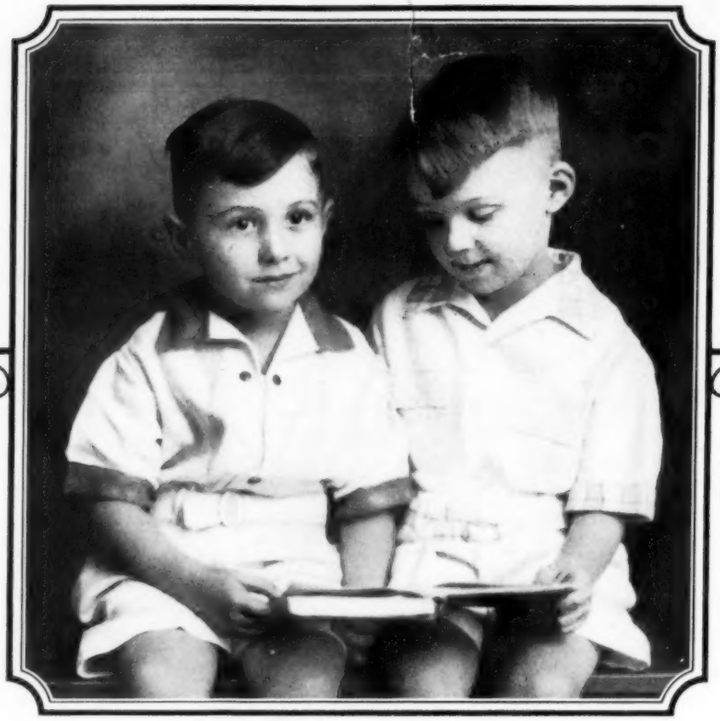

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HYGEIA

THE HEALTH MAGAZINE

Published by the American Medical Association
Edited by Morris Fishbein, M.D.

VOLUME 7 — SEPTEMBER, 1929 — NUMBER 9

WHO'S WHO IN THIS ISSUE

AVIATION has opened many new fields of activity, among the most interesting of which is a special branch of medicine dealing with the physical problems peculiar to flyers. As one of the first to bear the title of flight surgeon in commercial aviation, DR. JOHN A. TAMISIEA describes his work and its importance in the development of safe flying.

THERESA DANSDILL, well known in health education circles, is director of child health for the North Carolina Tuberculosis Association. DR. C. N. JOHNSON is editor of the *Journal* of the American Dental Association and a professor of dental surgery.

DR. WILLIAM D. REID, a specialist in diseases of the heart, has a hopeful message for those who fear they may have heart disease but who have not had the diagnosis confirmed.

Physicians concerned with nervous and mental disease are directing attention more and more to the tension of modern life and its devastating effects. LOUISE F. WINDLE writes from first-hand observation of an attempt to counteract the prevalent rapid pace of college life by definite training in relaxation.

DR. EMANUEL KRIMSKY'S explanation of adenoids completes a series of three articles which discussed the tonsils as well. DR. MORRILL L. ILSLEY writes from the point of view of a college director of health who has seen many boys and girls enter college without adequate training in self care.

Teachers of anatomy and physiology find much material for class use in DR. B. C. H. HARVEY'S articles on anatomy, which began in the January issue and will continue to the end of the year.

Teaching handicapped children to take places in the world instead of living restricted, unhappy lives is the theme of the article by DR. HUGH GRANT ROWELL, a prominent health educator. WENDELL JOHNSON has studied his own case of stuttering as work toward an advanced degree at the University of Iowa. DR. EDWARD L. MARKTHALER and GEORGE W. HUNTER inject a highly practical note into the subject of school health with their discussion of taxes in relation to grades.

DR. FRANK HOWARD RICHARDSON, author of many works on child health, writes of nursery schools. "The School Lunch Room" is a health play prepared under the direction of AILSIE M. STEVENSON.

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The Human Factory

The diagrammatic chart on the opposite page illustrating the activities of the human body is presented by special arrangement with Franckh'sche Verlagshandlung of Stuttgart, Germany.

THE centers in the brain for control of thought and of automatic functions of the body are revealed in switchboard devices and conferences in various compartments of the skull. The center for hearing is a radio antenna and the eye is a great camera. From the brain by way of the spinal cord go the great nerves, and a switchboard in the brain stem arranges for proper transmission of stimuli and impulses.

Oxygen taken in by the nose (1) goes to the lungs (2, 3, 4) and with the blood to the heart (6, 7). The blood moves on from the heart in arterial form supplying the brain (8) and going also to the digestive organs (9) and to the pancreas (10) and the spleen (11) and the muscles (12) and the bone marrow (13, 14) and so to the kidneys (15). As readers of HYGEIA know, the venous blood is oxygenated in the lungs. The pancreas provides ferments for digestion of protein, starch and fat. The spleen has to do with the formation of blood and changes in its composition. In the muscles energy from the blood is used and stored, and the bone marrow aids in the formation of new blood cells. The kidneys separate off and secrete toxic materials. Now the blood having served the cells goes back by the veins (16, 17) to the heart (18, 19) and thence to the lungs, which eliminate carbonic acid by the respiration (20, 21, 22, 23).

Food taken in at the mouth (a) is chewed by the teeth (b) and acted on by salivary ferments (c), going by the esophagus, or food pipe (d), to the stomach (e), where it is acted on by hydrochloric acid (f) and pepsin (g) and other ferments (h). The switchman then lets open the valve (i) which passes the food into the intestines, there to be mixed with bile from the liver and gallbladder (j) and acted on by ferments coming from the pancreas and intestine (k, l). Some of the material goes directly to the blood by way of chyle vessels (m, n, o). Other material is carried to the liver by way of vessels (p, q, r, s) and there it is stored, sugar and starch being used for energy, and toxic materials are passed out into the blood and the bile (v, w, x and y). The kidneys discharge their waste into the urine bladder. The muscles are a great motor system and the network of nerves from the brain and the great nerve centers may be seen ramifying throughout the great machine.

Keeping Pilots Fit

Air mail pilots have to fly over all sorts of country and in all types of weather.

A PERFECT airplane flown by an imperfect pilot is only an imperfect airplane. The realization of this explains what prompted the nation's largest air transport company, the Boeing System, whose planes fly 10,000 miles a day on transcontinental and Pacific coast air mail, express and passenger routes, to introduce the practice of bringing pilots to the doctor's office to be tested, just as a railroad man's watch is periodically inspected.

If a newsboy should shout "Extra! Bad Goggles Cause Crash!" it might sound extravagant, but if the entire picture were painted by the journalist, this headline would be the truth. The lad might even add to his cry, "Pilot Warned by Medical Examiner to Correct His Goggles and Have His Tonsils Removed."

A small stone may derail a huge engine, a loose paving brick may upset a truck, and by the same token a little spot of infection in the tonsils or in the teeth may be the beginning of disorders that would so unbalance a pilot's health that disaster might follow.

It is bad business to send a pilot who is below par into the air in charge of a precious cargo of human beings and mail and a ship costing about $25,000. This has to be explained to the pilots, who are on the whole highly intelligent men capable of grasping an argument; still, their success has led them to believe that they can fly no matter what their condition is.

The Boeing System was the first company to inaugurate the practice of a complete check on the physical condition of its pilots. It is a pioneer line and its planes fly more mileage than those of any other company. Its routes offer many varied operating conditions; its pilots fly 4,600 miles at night, in addition to the day flying; the planes fly from sea level to an altitude of 12,000 feet over five mountain ranges; the pilots have encountered ground temperature ranging from 35 F. below zero to 135 F. The Chicago-Oakland-San Francisco route is the longest air mail route in the world, while the Los Angeles-Seattle route ranks second in the United States.

By John A. Tamisiea

In June, 1928, this system, after one year's operation of mail, express and passenger carriers, decided to ask permission of the U. S. Department of Commerce to have its pilots examined each month. Department officials complimented the company for its foresight and saw in medical examination an excellent instrument to remove certain of the hazards of flying. Immediately, two graduate flight surgeons in the Army Reserve were appointed medical examiners.

One of the most difficult things to put over to the pilots was the idea of going after physical trouble in advance. Every physician has the same difficulty with his patients. There are thousands of persons who would benefit vastly in health, would have better dispositions, better chances of succeeding in business and longer life if they were to submit to a regular physical test, say at least once a year. A number of old line insurance companies are giving their policy-holders free semiannual medical examinations. Experience has taught them the value of taking care of ailments in the early stages.

By means of this head phone, fitted by a flight surgeon, the pilot can talk to ground stations 200 miles distant from an elevation of 12,000 feet.

Many of the Boeing pilots felt that they were in perfect health, but in examining them the doctor was able to detect the likelihood of future trouble, based on a barely noticeable disease condition of teeth, tonsils or perhaps kidneys. There might be evidence of some slight infection that would grow and come to a climax so suddenly as to attack a pilot during flight. At first it was a battle with the men to get them to have these things attended to. Prevention is easier than cure. They all see that now, and it is exactly the course they are following in caring for their health.

High Altitudes Tire Pilot

The allied air forces found during the World War that a man who flew steadily for more than four hours a day would become fatigued quickly. The Boeing Company has divided its route into divisions, giving every man approximately a four-hour flight with at least a full day's rest between runs. Many times the rest period runs two and three days.

High altitudes tire a pilot quickly. This caused the company to order its planes to be flown at the lowest safe altitude, thus insuring the pilot's highest efficiency and the passenger's safety. Experience has proved that a flyer becomes stale from too much flying, too little exercise and loss of sleep. Therefore, the men are not permitted to fly too much and are advised to exercise and get their needed sleep.

The pilots are mostly married men and their home lives are the same as that of a clerk, a doctor or a merchant. On the night that a pilot is due out, one will invariably find him at the field four or five hours early soundly sleeping up to within about fifteen minutes of the scheduled time of departure.

The pilot's fatigue is due to strain that he experiences at the stick. It may become chronic and develop into a condition known as staleness (neurocirculatory asthenia). This condition results in flagging of physical energy, falling off in efficiency and flying ability, and a development of nervous instability. These are conditions which the monthly examinations tend to prevent.

Schneider Tests Indicate Fatigue

Physical fitness is palpably more important to the air pilot than to a man in any other walk of life. It follows then that every flyer should be under constant medical supervision, the examiner to be a trained man in the subject of aviation medicine and physical fitness as a whole; hence the flight surgeon. It is the flight surgeon's duty to see that his men keep in good physical condition through suitable exercise.

As an athlete sometimes goes stale from too much exercise of the same type, so does a pilot go stale from nervous strain and frequently from too little physical effort. It is not necessary to go into the neurologic examination monthly as this is done thoroughly in the regular annual and semiannual examinations required by the Department of Commerce.

The thing the examiner must look for is neurocirculatory asthenia, or fatigue. This is

best done through the agency of the Schneider index, a painstaking series of tests perfected by Dr. Schneider and used in all branches of the United States Air Service. The index is comprised of a series of pulse and blood pressure readings before and after exercise; and by a more or less intricate system of scoring, one arrives at a definite score. If a man receives a mark of eight or above in the United States Air Corps, he is considered to be all right, but if his mark is below this, he is again checked to see what his trouble is.

Bowling and Golf Help Restore Flyers

In the Boeing company a man with a low Schneider (below ten) is sent home to rest and ordered to come back the next day. If the results of the next test are again low, he is "set down" or ordered not to fly for a number of days. During this time he is urged to forget all about flying if he can and to devote his time to golf, fishing and other pleasures. After a few days he comes back and most likely is in good condition, resulting in a restoration of his flying status. The two best forms of exercise a pilot can take, in my opinion, are bowling and golf. As Dr. Schneider says, "All parts of the body are benefited by exercise, and no part is more benefited than the nervous system."

When pilots are in charge of passengers and costly loads, the examiner rechecks a man who gets below a mark of ten. This is justified, as there is a great deal more than this single pilot and his plane at stake. Every crash produces an effect on the national consciousness that retards air-mindedness just so much. Commercial aviation is a much better agency for making America air-minded than is military flying. The requirements for commercial flying are strict but are not so high as those of military air operations because military flyers are required to do acrobatics, to fly all types of planes and to go to extreme altitudes while commercial pilots are not. Every crash is headlined in the largest type the newspaper has and is placed in a most conspicuous spot on the front page. Every time a flyer can be prevented from coming down out of control, the whole industry of flying is further advanced.

Pilot Jack Knight is standing on one foot for fifteen seconds to test his equilibrium, one of the many medical tests given regularly to pilots.

That good eyes are one of the most important factors in aviation is agreed by all writers on the subject of aviation medicine and by nearly all aviators themselves. Boeing pilots all possess perfect vision. As 46 per cent of Boeing's flying is done at night, the eyes of every pilot are more carefully examined than if the flying was all done in daylight. Particularly painstaking is the examination of the retina, as a diseased retina causes a condition known as "night blindness." Liver disturbances of a complicated nature may also produce the same condition.

Pilot Must Not Be Mouth Breather

The nose must be free from growths and the tonsils free from infection and normal in size. Abnormalities, such as would cause nasal obstruction, must be removed, for a pilot must not be a mouth breather. The reason for this is that a mouth breather cannot satisfactorily expand the lungs. Diseased or enlarged tonsils must be removed as they interfere with proper breathing and are a source of sundry ailments. General physical ailments decrease a pilot's resistance and his efficiency and reliability as well. They make him less alert.

All large and successful commercial air transport services are strict about examinations of planes, and it is well that this is the case. No railroad engine or steamship undergoes the close inspection and reinspection that an airplane gets from highly trained mechanics. Is it sensible, therefore, to have more concern about a ship than about the man who is to fly it?

Long skirts went their way not because they swept up the street germs but because hiking became the style.

The Road to Beauty

By Theresa Dansdill

In the heart of every girl is the desire to look well. Believe it or not, this is an 18 year old high school girl in her graduating outfit.

FROM that far off yesterday when the first cave woman pinned up her hair with thorns, wrapped her mantle of skins around her and gazed at her reflection in the clear stream to the just yesterday when a girl took out her vanity case, fluffed her hair and powdered her nose, the desire to look well has been the dream of every normal girl or woman. The milestones along the way show advance and retreat, smooth highways and dangerous detours. But whenever that journeying brought an improvement in looks or greater skill that pathway became a beaten trail. High ruffs, steel bodices, crinoline, hoops and bustles came, had their day and went away never to return.

Physicians agree that present day styles of dress are healthful. Then why are tuberculosis, pneumonia and heart disease daily taking so pitiful a toll? Because the majority of girls and women have not yet learned that good health habits bring a lovelier skin, glossier hair and brighter eyes. They can bring a veritable fountain of youth to which Ponce de Leon's could not hold a candle, if fountains ever were known to hold candles.

Nourishing Food Adds to Beauty

Good health habits are becoming fashionable not because of the better health they bring but because of the improvement in looks that comes to all who acquire and keep them. In most instances a health worker might as well talk to a stone Buddha as to tell a girl that milk and other nourishing foods are good for her health. Show her that these foods improve her looks and she eats them as cheerfully as she submits to a permanent wave because she thinks it will add to her attractiveness.

Health Is Not Girls' Chief Concern

It has always been so. The 18 year old girl with the fan was a high school graduate when girls wore a gauze vest, a corset, a combination corset cover and drawers, a chemise, an extra petticoat, a princess slip and a big sleeved

dress made of 12 or 14 yards of organdy or other fine cotton material. The extra petticoat worn for fear she might "show through" when walking in the sunshine added a few extra pounds to her clothing, but what difference? It was the prevailing style, as were the high cloth-top button shoes and fine black cotton hose, which completed the costume of the well dressed young woman of that day.

The college freshman in the heavily lined trailing dress and lace collared jacket wore practically the same underthings as the 18 year old girl previously mentioned, except that her slip was of silk and the extra petticoat usually of sateen.

Were these girls concerned about the health hazard of their stiff, heavily boned corsets? Or did they worry about the germs picked up by the long skirts? What heed did they give to editorials written about them at that time? Did the editor throw a scare who wrote, "If a picture of a corseted woman's insides could be

In great-grandmother's time girls fainted easily because it was fashionable to swoon.

taken, this is what it would show—chest walls pressed together, stomach pushed down, liver and intestines crowded out of place, all the internal organs askew. Why, oh why, will women destroy their health for the sake of a tiny waist?"

Or did these same girls heed the poet who wrote:

> Sweep! sweep! sweep!
> Microbe, mud and dirt.
> Style and wealth mean more than health—
> This is the song of the skirt.
> Corner loafers laugh,
> Street cleaners stop their work—
> When fashion says a thing must be
> No woman dares to shirk.

When women began to become expert in golf, the fashion in golfing clothes changed from this style to the sensible modern sports wear.

The girls smiled, tightened the corsets a bit, wore the skirts a few inches longer and let it go at that.

What made the change? Outdoor sports became popular, golf and hiking quite the smart thing to do. It was fashionable to take up some game or exercise and to become proficient in it. It was becoming just as unfashionable to faint or to be frail as it had been fashionable in the previous years. Physical experts stressed the charm of grace and poise that well controlled muscles give. No girl could excel in games or plays when hampered by a stiff, tightly fitting corset or trailing skirts, so away they went. Soon the girls began to experience the joy of a pliant, supple body and the present mode of unhampered dress evolved. The few who clung to the old style fell in line and another milestone marked the highway of more wholesome living.

Every health worker in the land who is in touch with high school or college girls can help to "scotch" the tuberculosis-inviting, nerve-destroying fad of unhealthful weight reduction by showing how this weight reducing affects the skin, hair, nails and general appearance. Just as soon as a girl can be led to see that her skin, hair, eyes and disposition are finer when she is more nearly her healthful weight, she

works cheerfully toward that goal. She eats the right kinds of food and sleeps longer hours just as philosophically as her mother endured the discomfort of trailing, dragging skirts.

The appeal should be natural and scientific, neither emotional nor sentimental. Laboratory research proves that milk, fruits and fresh vegetables, especially green ones, help to give a clear skin, glossy hair and prettier nails. They do their work far better, of course, when the elimination is good. Physicians know that restful sleep and relaxation noticeably improve the appearance. Neurologists tell us without reservation that the nerve strain coming from too little sleep, inadequate food and other bad health habits helps to make a muddy skin, shaggy hair and dull eyes. More can be done in a few talks to lead the girls in the right direction by the better looks appeal than by 500 straight health talks.

When the girl of 25 years ago dressed up, she wore these garments and a shirt, a corset and her dress. She wore five times more than the modern girl, yet tuberculosis took a greater toll then than now.

Proof of the Pudding

These statements are not merely theory. Definite courses in health education for college and high school girls given the past year in California and North Carolina prove that the theory is not a theory but a gratifying fact. The girls in these courses were chosen from three groups and sometimes one girl classified in all of them. The girls with health habits noticeably bad, those who suffered each month during the menstrual period and those who were seriously undernourished were selected. The first meeting was obligatory; the others were optional. Ninety per cent of the girls carried the course through a period of twelve weeks. Individual or group conferences were arranged to suit the convenience of the girls. Diets were analyzed and explained, sleep and rest requirements talked over, mental attitudes analyzed and the findings of the physical examination given by a physician discussed. Not all the girls were helped but a large number improved so rapidly as a result of the health habit regimen that it more than repaid the high schools and colleges for the extra time given in teaching the course.

Reducing the Hips

A few made no gain whatever in weight, but their gain in health and looks was noticeable. Some gained in weight, as well as in looks and in a sense of well-being. Others seemed to be just where they were when they began the course.

"I shouldn't mind gaining if I didn't get so big around my hips," said one girl.

"Maintain a good posture and your gain will be distributed evenly all over your body," replied her physical education director. And it is true. When the muscles are used to pull in the abdomen, to retract the buttock muscles and to lengthen the spine these muscles have work to do and are exercised. Fat does not accumulate so readily when muscles receive a

sufficient amount of exercise

One hundred of the 500 girls formed the habit of good posture not because it was a health measure but because they wanted to reduce the size of the hips and the abdomen.

Ninety per cent of the girls who suffered at their menstrual period had bad posture or poor elimination or both. When they knew that these habits might be the cause of their pain they gladly worked to improve their posture, their food and sleep habits and to have good elimination with the result that seventy-four of the eighty in that group went through their second month with no pain whatever. The other girls who had menstrual pain needed the attention of a physician or a surgeon.

"My skin is a fright!" said a little freshman gazing into her compact mirror. "I've worried so about my exams that nothing makes me look like myself." She hit the nail on the head more squarely than she realized. Physiologic research experts show that unwholesome mental attitudes leave their imprint on skin, hair and nails. Need any one go to an expert to prove that assertion? Most persons can remember the havoc a week of mental stress wrought upon the looks. In this fact is an opportunity to stress the desirability of cheerfulness, good sportsmanship and other wholesome mental attitudes. What matter the goal—beauty or health? Any girl or woman who gains control of her mental attitudes is sweeter and lovelier. Health directors are using color charts for the girls to study, knowing the satisfaction that comes with the knowledge of being becomingly dressed. They know that glossy hair, a happy look, a clear skin, well cared for teeth and nails and an easy graceful carriage enhance a costume. The health director and the girls also know that no color, costume or cosmetic can entirely disguise a muddy skin, dull eyes, unhealthy nails or a look of worry.

There are many milestones yet to pass before the majority of our college and high school girls reach their optimal health. Foolish fashions still prevail. The present trend is toward more sane and more wholesome living, because at heart our girls are sane and wholesome. When these girls really see that good health habits improve their looks, bad habits will go their way, just as past unhealthful modes of dress are now in the limbo of out of date.

Lenci, the famous Italian designer of dolls, has made for the American Dental Association an attractive set of felt posters on mouth hygiene.

The TEETH of the School Child

By C. N. Johnson

THE significance of the teeth as factors in health and disease is becoming so generally recognized that it is unnecessary to set up any argument to establish the fact, but even those who come in close contact with children in school work seldom have a full realization of the extent to which dental disease exists among them.

Statistics are not always reliable but after a number of surveys in different sections of the country it is safe to conclude that at least 90 per cent of the children attending our schools have definite defects in their teeth. While some of these defects may be classed as minor, there is an appalling amount of serious disease that must inevitably react on the subsequent health of the child if permitted to go uncared for.

The Long Road to Prevention

Of course the goal of medicine and dentistry is prevention—every one is agreed on that. But dentistry has a long road to travel before it brings about prevention of dental disease, just as medicine has before it prevents certain other diseases. There are many factors in prevention of which the average person never dreams. First, dentists must master the various causes of disease—I mean all of its manifestations—and this they have not yet done with such diseases as dental decay and those affections of the supporting structures of the teeth commonly grouped under the term pyorrhea. They, of course, know that an acid causes the disintegration of enamel, bringing about cavities in the teeth, but they do not know why it does this in one mouth and not in another when they can demonstrate the micro-organism that produces the acid in all mouths. This is merely mentioned to show that prevention is not such a simple matter after all, and yet today some encouraging gestures toward preventing decay of the teeth are being made.

Children's Teeth Better than Parents' Were

Saner modes of living and better diet and hygiene of the mouth are doing some of it, and the earliest possible dental care of children is doing the rest. In many families the teeth of young people are today found in excellent condition at an age when their parents had lost many of theirs, and if this care is given to children generation after generation we shall some day have a generation with almost no tendency to decay of the teeth. But this of course means cooperation on the part of the people, and before the dental profession gains this cooperation the people must be educated to the need for it.

It should be the policy of every teacher in a school to instruct the children in health matters. There seems to be a tendency on the part of

some teachers to assume the attitude that their function is confined to imparting knowledge of a purely academic character—the time honored, so-called "three R's" and those subjects that are supposed to lead later to a cultural education; but what benefit is culture to a person who is lacking the physical equipment to apply it? More and more we must seek to build strong bodies in our children and not be so frantically ambitious to achieve a high percentage of passing grades. To turn pupils out of a school with well filled brains is commendable, but the education is unbalanced that concentrates wholly on this at the expense of the physical well being of the child.

Of course it cannot be assumed that a teacher shall devote the major part of his time to talking on health—that is not what he is employed for—but if he is to conserve the welfare of his pupils he will talk part of the time on their health, and to this end he should inform himself on the fundamental rules of health.

For instance, here are a few things the teacher should know about the teeth: He should know the ill effects of decayed and neglected teeth on bodily welfare, particularly in the growing child. He should know that when a cavity starts in a tooth it means the destruction of that tooth unless something is done to check it, and that the sooner attention is given it by a dentist the more surely will the tooth be saved and the less it will cost to save it.

Nature Does Not Repair Tooth Damage

Nature doesn't quite play fair with the teeth. If a piece of flesh is lost or if a bone is broken, Nature rushes in to repair the damage, but the moment a cavity comes in a tooth she lies down on the job and lets it go at that. She never attempts to fill a decayed tooth, and that is where the general surgeon has it over the dentist—the latter must devise some plan of replacing the lost portion of the tooth by artificial means. That he does this in such a manner that he thereby frequently saves the tooth for thirty or forty years longer than it would have lasted without his attention may be advanced as a justification for his existence.

But the dentist never will be able to do the good in the world that he might unless the children are brought to him early enough for him to detect and care for cavities while they are small, before the strength of the tooth has been so impaired that the filling has little foundation to support it. Dental decay is largely a disease of youth, and if it is to be fought successfully and conquered it must be tackled in youth. Fortunately teachers are today more alert than formerly in recognizing physical handicaps in children and are more cooperative in any movement tending to their relief. When examinations are conducted in the mouths of children in our public schools the teachers instead of looking askance at the procedure, as they were once inclined to do, are now only too glad to assist in every way possible. They have learned that it is not conducive to the educational advancement of children for them to be sent home with toothache or kept out of school with dental abscesses, and so they are being won over to a policy of prevention.

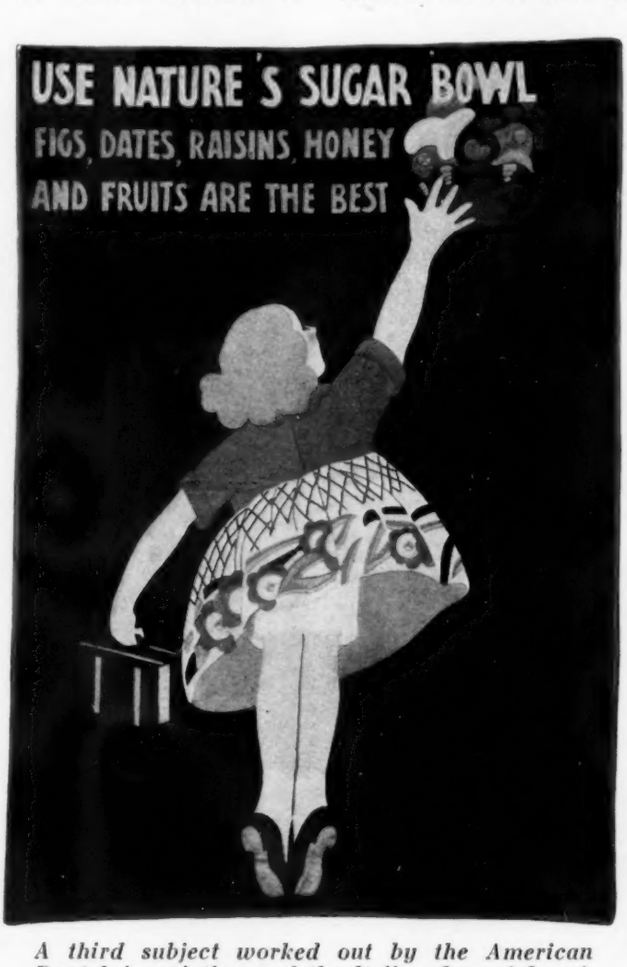
We have it from certain boards of education —New York City for instance—that 80 per cent of the repeaters in our public schools are made repeaters on account of physical handicaps, and that most of these handicaps are caused by bad teeth. Regardless of statistics we know that tooth trouble looms large in the list of ailments that interfere with the normal progress of school children and that there should be a concerted effort on the part of every one connected with public education to eliminate it as far as possible.

Another Lenci dental poster. The vivid coloring is unfortunately lost in halftone reproduction.

One of the things that every one who has anything to do with the care of children should know is the significance of a certain tooth in a child's mouth. Probably if the average person were asked to name the most important tooth in the mouth he would at once name one of the

front teeth. That would be a natural selection on account of the appearance of an individual with an incisor missing, but appearance is not all there is to the story of the teeth, and an incisor may be replaced by artificial means so as to defy detection without seriously changing the shape of the jaws.

But there is one tooth that means more not only to the effectiveness of mastication but to the form of the jaws than several of the anterior teeth combined, and that is the first permanent molar. This tooth is usually erroneously called the "sixth year molar" because it is supposed to come in at the sixth year of age. But this is a misnomer, for the reason that it may appear at any time between the fifth and seventh years and even before or after those years. The first permanent molar is by all estimates the most important tooth in the mouth and its loss results in greater havoc than the loss of any other tooth. It comes in just behind the baby, or temporary, teeth and thus it is frequently mistaken for a temporary tooth and permitted to decay under the erroneous idea that it will later be replaced by a permanent tooth.



A third subject worked out by the American Dental Association and the Italian firm of Lenci.

Every mother, nurse, governess, guardian, physician and teacher should be able to recognize a first permanent molar immediately without question, and fortunately there is an infallible and simple way to identify it merely by glancing in the child's mouth. There are twenty teeth in the temporary set, ten above and ten below, and any tooth that comes in back of these belongs to the permanent set. Start in the median line in front between the two central incisors and count back on either side and if there are more than five teeth it may be known at once that the extra ones belong to the permanent set.

There are four first permanent molars in every mouth, two in the upper jaw and two in the lower, and they are the chief support of the jaws during the period between the loss of the temporary teeth and the growth to full length of the rest of the permanent teeth. If they are lost before the other permanent teeth meet each other on closing the mouth, which is when the child is from 10 to 12 years of age, the jaws are allowed to drop too close together, which at once detracts from the proper form of the face.

There is a diminution of character to the contour of the face of any child who has lost the first permanent molars, and the extraction of even one of them will seriously disarrange the anatomic relation of the upper teeth with the lowers and to that extent will interfere with effective mastication. There was never a mouth with a perfectly normal relationship between the upper and lower teeth after the first permanent molar was gone, and this fact should induce every one connected with child development to try to conserve it.

By the same token the first permanent molar should be saved in the mouths of poor children as well as in the mouths of the rich, which at once introduces an economic problem that cannot be considered in all of its detail at this time. I have no disposition to discuss the desirability or undesirability of so-called state medicine or state dentistry because at the present time it is too "touchy" a subject, but a few observations might be made that seem to be fundamental. Too much coddling of the individual on the part of the state is demoralizing. The dole system as practiced in England today accounts for many of her economic difficulties. The moment an able-bodied person reaches out the hand to accept something for nothing there is at once a moral disintegration of character that tends toward pauperism and dependency. Much harm has unwittingly been done by our charitable institutions in fostering the spirit of dependency, but here is the present situation with our school children: Literally thousands of them are suffering from diseases of the teeth which lead to other disease and to

physical and mental disability. An appreciable number of them come from homes in which the bread-and-butter problem is a serious one. Even if they were educated as to the desirability or necessity of caring for the teeth they have no means of providing dental service.

What is to be done about it? Dental decay is a disease that will not wait for lessons to be taught. One of the chief functions of every dental clinic should be constantly to educate the children that come to it on the subject of mouth hygiene and their own individual obligation in the matter.

If a sufficient safeguard is employed in the public clinic the child of well-to-do parents is refused service aside from the relief of pain in an emergency, which should always be a fundamental obligation regardless of economics. These clinics, if properly conducted, justify themselves on their educational value in bringing to the attention of the children and their parents the significance of dental service as it relates to the health of the individual and the community.

In the spring of 1928 an examination was made of 66,000 children in the public schools of Chicago by voluntary service on the part of 625 members of the Chicago Dental Society on invitation of the commissioner of health. In the autumn a check-up was made of three of these schools and of the 273 pupils reexamined 114 had already applied to a private dentist for service as the result of the spring examination. In the report of the dental clinics in the public schools from Feb. 1 to June 17, 1929, there were examined by the school dentists and dental hygienists 73,223 children, and in a reinspection of part of these it was found that out of 12,873 who had gone to a dentist 10,698 went to a private practitioner while only 2,175 went to the clinic. In the vast majority of cases the children of well-to-do parents will seek out a private dentist as soon as they are made aware that the teeth need attention.

Find New Causes for Asthma

THOUGH it has long been known that ragweed causes hay-fever and asthma, the fact that many other substances are equally disastrous to the unfortunate persons who happen to be sensitive to them has been discovered only within recent years. Not only plants, but foods and a great variety of materials in common use may bring about the most distressing asthma and hay-fever without the victims' ever suspecting the cause.

Many of these substances have been identified and elaborate methods of testing have been worked out. Nowadays the physician with an asthma or hay-fever patient even uses the vacuum cleaner to detect the offending material in the sufferer's environment.

Two new items have been added to the already long list of materials to which the hay-fever and asthma patient may be hypersensitive. Dr. Grafton Tyler Brown in *The Journal* of the American Medical Association tells of a series of patients sensitive to cottonseed and to kapok.

When the cotton gin has separated the fiber from the seed of the cotton plant, both products are put to a myriad uses. Many persons are sensitive to cotton, but sensitivity to the seed is apparently a different matter. Perhaps the commonest form in which this product occurs is in the substitutes for olive oil extensively used in making mayonnaise and in lard substitutes.

Cottonseed oil is also used occasionally in the manufacture of soap and as a vehicle in nasal sprays and ointments.

Cottonseed meal, which is the residue left after the oil has been expressed from the seeds, is used as a fertilizer and as feed for live stock. In this way the milk from cows fed on cottonseed meal might produce symptoms of asthma and hay-fever in persons sensitive to this substance.

Kapok is most familiar as a stuffing in mattresses, pillows and upholstered furniture. It is said that the United States leads all other countries in the importation of kapok from its native haunts in the East and West Indies. The kapok tree is botanically related to the cotton plant.

One woman who had suffered from severe asthma for five years reacted intensely to the test for cottonseed sensitization. The physician found that she had been eating mayonnaise dressing made from cottonseed oil practically every day. She also had a serious attack when her husband used cottonseed meal fertilizer on the yard about their house and another when stuffing pillows with kapok. When she learned the cause of her difficulty she eliminated cottonseed and kapok from her environment and had no further trouble.

Removing the substances that cause asthma and hay-fever from the patient is the surest method of avoiding the consequences of hypersensitivity. In the case of common substances that occur constantly in everyday life, this is sometimes not possible. For sufferers thus afflicted physicians are often able to prepare a kind of vaccine which builds up in them a gradual tolerance for the offending substances.

Simulations of *Heart Disease*

By William D. Reid

"The heart is like the stomach in displaying symptoms due to disease elsewhere," the doctor told the club women.

"THE other day a man came into my office looking as if he misdoubted he should have gone to a lawyer instead and had his will made." The doctor was addressing a women's club and he looked appraisingly over his audience, wondering how much initial interest there was in his subject (it read on the program, rather alarmingly, "Simulations of Heart Disease"), how much of intelligence his hearers portrayed, and how much of the purely scientific he dared to introduce. "Pretty much of a gamble," he confided to himself; "but maybe it isn't all politeness that makes them look so keen." He continued.

"My patient was a clergyman who complained of frequent attacks of fainting. He had been rejected for the U. S. Army during the World War on account of a heart murmur. On the other hand he had been captain of his college basketball team and became a mile runner of some ability, in spite of this murmur. He had even run with Joie Ray in an exhibition race arranged by a well known athletic association, and was, at the time he came to me, a member of the Y. M. C. A. basketball team.

A Confused Picture

"I questioned him further and found that frequently he was so nervous before special church services that he was unable to eat his meals, that he was pastor of a church notable for its inability to keep a pastor, that he had worked hard against constantly growing adverse sentiment, and that his fainting attacks had developed since the knowledge of dissension in his church had come to him. Take that little murmur in his heart out of the picture and the whole sequence of events is easily understood; also the obvious remedy. Put the murmur back and the whole picture is confused, the remedy uncertain. It is so evidently of no importance that I'm sure you will agree with me when I take it out and leave it out.

Not Really Heart Disease

"We've been hearing and reading a lot lately of how the heart has ranked first in the mortality statistics of this country during recent years. Perhaps that is why we pay so much heed to slight abnormalities of the heart, for it is comfortingly true that from one third to one half the people who think they have heart disease are mistaken. The heart is like the stomach in displaying symptoms due to disease elsewhere. Take, for instance, vomiting, which may indicate trouble in practically any part of the body.

"Of those patients who come to our heart clinics we have three groups—those who have organic disease of the heart, those who have organic disease elsewhere in the body with heart symptoms, and those who have no organic disease but a functional condition. There are a few underlying principles in the diagnosis of organic disease of the heart that you may be interested to know. Physicians rarely diagnose heart disease in patients under 40 unless one

or more of the chief reliable signs are present; in the elderly the reverse is true. The presence of acute rheumatic fever, chorea (commonly known as St. Vitus' dance), or syphilis make it improper to state that heart disease is absent until sufficient time has elapsed to permit the evidence of involvement of the heart to become manifest. The expression, 'potential heart disease' is used for such cases during the period of observation.

"Coming to the group in which the organic disease is elsewhere in the body, let us consider the list of diseases that may at times bring into question the integrity of the heart. You may be surprised to learn how long it is—obesity, diseases of the blood, infections, kidney disease, tuberculosis, cancer, cirrhosis of the liver and a host of other affections. Sir William Osler once said that he who knew syphilis in all its manifestations knew all medicine. Perhaps this may be paraphrased to, 'He who would know all about heart disease must know all medicine.'

A number of the women came up to ask questions.

"Let me tell you of one instance. A factory foreman, 65 years old, came to me one day saying he had been unable to work for three weeks. Previous to this for three months or more he had been in gradually failing health, with shortness of breath and marked fatigue when he exerted himself. On examination, he appeared normal except for marked pallor of skin, lips and tongue and a murmur over the heart. We suspected pernicious anemia and ordered a blood examination, which absolutely confirmed our suspicions. So he was given the new liver diet that recently has been developed for pernicious anemia and was promptly relieved of his symptoms.

The doctor looked appraisingly at his audience as he arose.

"We come now to the functional conditions. Some of you are wondering just what that term implies. A functional condition may be defined as a derangement of the normal action of an organ without structural alteration.

"There are many patients in whom examination shows that the heart is normal and in whom there is no evidence of organic disease elsewhere. The doctor might be tempted to say, 'Why did you come to me? There is absolutely nothing wrong with you. Go back to work and forget your symptoms.' Nevertheless, there is something amiss with such patients and if their need of help is not met, it is not to be wondered at that they turn to various cults to obtain relief.

"Physicians today are increasingly aware of the frequency of symptoms that are not due to actual organic disease, but are of the nature often designated as functional neuroses. Many such patients are sufficiently relieved following a physician's assurance that their hearts are not diseased. Others need to be reeducated. They say 'If I'm not suffering from heart disease, then what is the trouble and what can I do for it?'

"In the first place, these functional neuroses are not imaginary. They are as real as manifestations of physical disease. It is no use to laugh them away or to try to shame a patient out of these attacks. They are caused by some mental condition that may or may not be known to the patient. It is the doctor's problem to find out the governing factor, and he can be quite certain in many cases that even having found that governing factor it will be difficult to benefit the patient or rather enable the patient to benefit himself. The physician will find as he works out the background of these attacks moral cowardice, perhaps, which seeks to hide under a cloak of illness; or an unhappy environment, which impels the patient to escape from it for a little in sickness; or even an ill temper that unconsciously (for remember that all these sequences are unrecognized by the patients who know only the final manifestation of them) seeks to distress others further by the appearance of illness.

"The normal individual, except at the time of physical exertion, should rarely be aware that he has a heart. There is, however, a condition known as a lowering of the level of consciousness at which time the patient becomes aware of the existence of various organs such as the heart and stomach. There are many things that lower the level of consciousness, such conditions as bodily exhaustion, mental stress and strain, and especially fear.

"Life offers many situations that are difficult to the individual. Some are mastered in a way that is satisfactory and so are permanently settled; others are not successfully met by the individual because of their nature or his inability, or both. In many instances these

events become unpleasant memories that it is instinctive to try to forget. In reality, however, these unmastered situations are not forgotten, but are thrust into our subconscious mind. Certain psychiatrists have shown that though these apparently forgotten events are below the ordinary level of consciousness they may, nevertheless, be the cause of a functional nervous disorder; at times the subconscious mind is potent in influencing the life of the individual.

Mental Instability

"Many persons have never acquired a normal mental or emotional stability. When subjected to stress they react in an abnormal way. They are said to be maladjusted to their environment. You are beginning to understand, I think, the interest and also the extreme difficulty in educating these poor sufferers to a saner and more healthful understanding of life.

"Most earnestly would I urge mothers of young children to be on the lookout for early manifestations of such mental instability. It is a phase of child training that is being written about a great deal in recent years.

"Ladies, I thank you for the kindly interest you have given me. My subject involves so much that it is hard to be as brief as the occasion would seem to demand. If there are any of you who would like to ask a question, I should be glad to try to answer it."

Three questions were hurried up to the doctor.

Q.—You spoke about certain chief reliable signs that must be present before diagnosing heart disease in a young person. Might I ask what they are?

A.—I didn't enumerate because I was afraid of being too technical. They are definite enlargement, disease of the large vessels leading from the heart, stenosis (or narrowing) of the mitral valve, twitching of a part of the heart (auricular fibrillation). A deficient tolerance to exercise in the young should rarely be attributed to the heart; tuberculosis or some other infection is more likely.

Dizziness and Heart Disease

Q.—Is dizziness a sign of heart disease?

A.—This question brings to my mind a patient who came to my clinic once. During the preceding year she had been unable to walk the distance of a single block without such dizziness that she must lean against something to avoid falling. She was said to be a victim of disease of the heart muscle and was using digitalis regularly. Examination showed nothing abnormal in the heart or body in general. The chief symptom of dizziness caused the ears to be examined, because of the well known aural vertigo (called Ménière's syndrome). The external canal of the right ear was solidly filled with impacted wax. This was removed by syringing with warm water and happily a complete cure resulted. This does not mean that all cases of dizziness can be so easily cured; dizziness is sometimes associated with heart disease but not necessarily.

Q.—Will you please give the name of any books I might read on mental hygiene? Are there any dealing with the training of children in proper mental habits?

A.—I think of two books which are fine and which should make this aspect of functional neurosis more clear. One is "Child Guidance" by Smiley Blanton and Margaret Gray Blanton, published by the Century Company in 1927. The other is "Fear" by J. R. Oliver, published by the Macmillan Company in 1927.

CAN *Relaxation* BE TAUGHT?

By Louise F. Windle

ACCORDING to those members of the older generation who are prone to look with alarm on modern college life, the number of nervous wrecks turned out by our colleges is surprisingly small. Any one visiting one of our up-to-date colleges for a day or two usually carries away with him the impression that college life is a whirlwind existence, and that the chances of any young person's living through several years of such a hurry-scurry, topsyturvy sort of life without permanent injury to his nervous system are small.

The most frequent criticism of the colleges is that the students have neither time nor opportunity for relaxation. They are on the go all the time; their life is a confused jumble of jazz bands, movies, lectures, portable phonographs, required meetings, automobiles, quizzes, airplanes and soda fountains. The complexity of modern life subjects them to a pressure that must inevitably induce nervous strain.

College authorities, when confronted with these criticisms, usually admit that college life is far from restful, yet few of them have definite suggestions for lessening the danger of nervous strain, if indeed such a danger really exists. There is in the Middle West, however, a junior college for women in which a study of the problem of relaxation has been undertaken.

James Madison Wood, president of Stephens College in Columbia, Mo., recognizing that there

College girls make jolly clowns, and an annual circus is a part of the program of most college athletic associations.

might be something in the cry for relaxation, two years ago set one of the members of his faculty the task of finding out just what relaxation means and whether or not it is a thing that can and should be taught in college. He placed the project in the hands of Miss Wilma D. Haynes, head of the physical education department at Stephens, and gave her a free hand to investigate and experiment in any way she saw fit. For the last two years Miss Haynes has been carrying on her work with the cooperation of her staff and with occasional assistance from the members of other departments.

Release of Tension

The first step in the Stephens project was to find out what relaxation means. Now, after two years of experimenting, those chiefly concerned with the problem admit they do not know precisely what relaxation means but they have some ideas on the subject. Miss Haynes, though not entirely satisfied with her definition, calls relaxation "release of tension." She explains this term by saying that a person who is free from tension, yet who at the same time is completely in control of himself and has his full store of potential power, is relaxed. A person in a fainting spell is not relaxed. The relaxation of fainting is weakness; there is complete loss of power and recovery is slow. On the other hand, a dancer going through the unfettered, rhythmical movements of a dance may achieve relaxation through a smooth, unrestrained localization of activity and release of power. A person walking easily, without conscious effort, achieves relaxation through the conservation and controlled release of power. Relaxation is not loss of control or surrender of power, but simply release of tension.

The cat is a perfect exponent of relaxation. Watch a cat as it lies on the floor with all four feet up in the air. There is no tension; the cat is apparently completely relaxed. But just let a mouse run across the room, and the cat is up and off as though shot out of a gun. There is no weakness in the cat's relaxation, no failure or slowness of recovery; the cat has the secret of release of tension coupled with retention of power.

Relaxation for power, then, rather than relaxation for weakness is the objective. It is apparent that what is relaxation for one person may not be at all relaxing for another. To some persons dancing, swimming, hiking or just being out of doors brings relaxation; to others such occupations are an ordeal leading to increase of tension rather than release of it. Some persons can go sound asleep for ten minutes and get up feeling refreshed and ready for any activity. Others wake up with a feeling of weakness and weariness that unfits them, for a time at least, for further exertion.

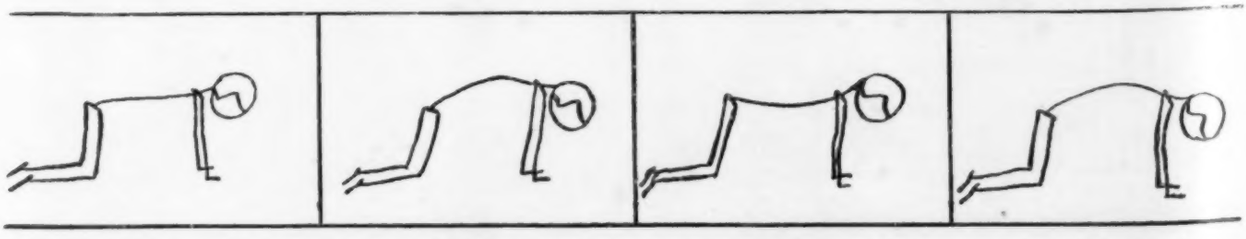
Sources of Relaxation

Recognizing the existence of these individual differences, the Stephens College workers attempted to list as many possible sources of relaxation as they could gather. Physical exercise, being the most obvious source, heads the list. All students at Stephens are urged to take up some form of physical exercise. The institution, like any other well equipped college, has a swimming pool, a gymnasium, tennis courts, hockey and soccer fields, a basketball court, a track, a riding academy and facilities for almost every kind of athletic activity. In all athletic work, however, the point stressed by the instructors is not merely muscular development or the attainment of superiority in a sport, but the physical satisfaction to be gained through the smooth functioning of the body. To swim well, to dance well, or to do almost any physical act well, the performer must be able to relax; there must be no strain, no tension to interfere with the smooth totality of movement that brings relaxation.

Although every student is urged to sign up for some form of physical exercise, no girl is forced to continue in sport that is distasteful to her. A girl may be under a nervous tension

Simple Exercises for Relaxation

I. THE CAT STRETCH. (REPEAT FIVE TIMES.)



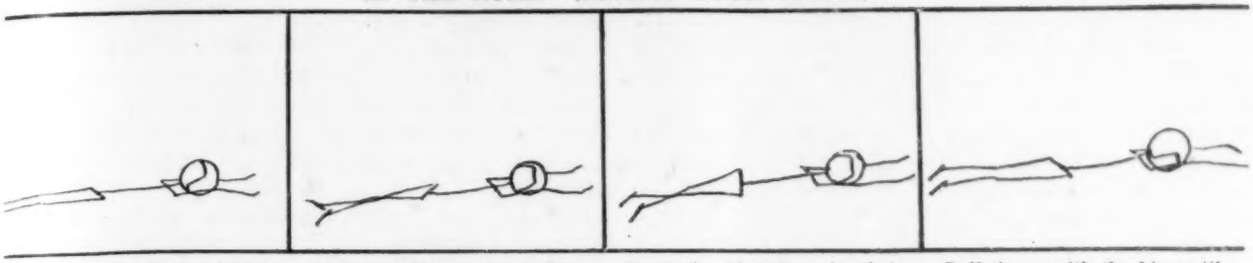
Stand on hands and knees—"all fours."

Raise the back and shoulders cat fashion, contracting the abdomen.

Relax and hollow the back, letting the shoulders down.

Raise the back again.

II. THE ROLL. (REPEAT FOUR TIMES.)



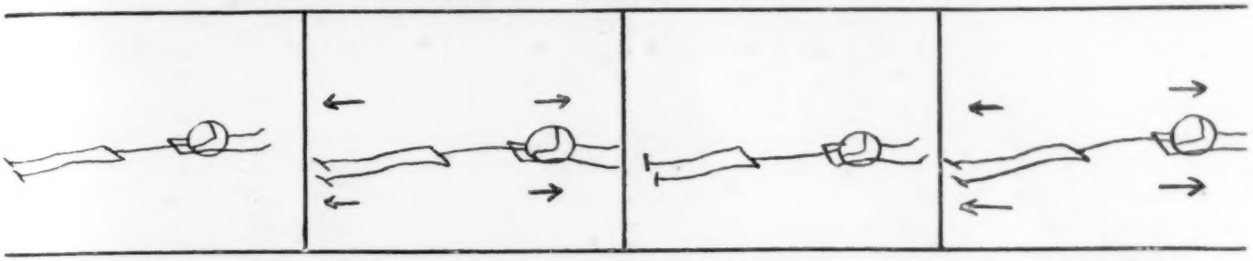
Lie flat on the back with the arms stretched overhead.

Start to roll over by picking one hip off the floor and keeping the shoulders straight.

Keep the shoulders in their original position as long as possible and continue to roll.

Pull down with the hip until you are lying face downward.

III. THE BACK STRETCH. (REPEAT EIGHT OR TEN TIMES.)



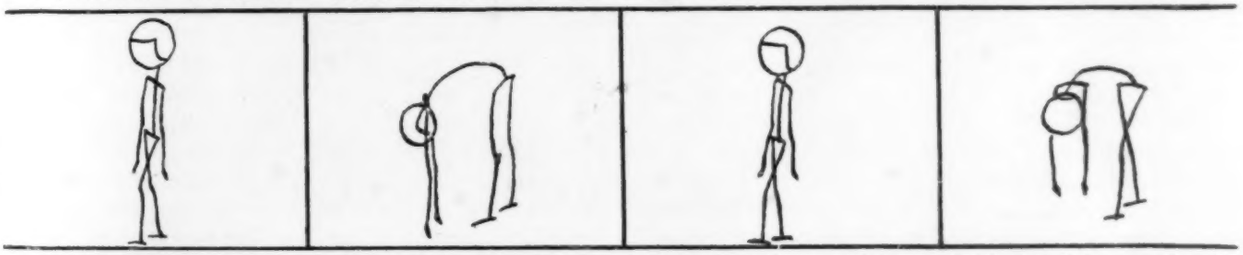
Lie flat on the back, with both arms outstretched.

Stretch out as far as possible.

Relax.

Stretch.

IV. WAVING WILLOWS. (REPEAT FIVE TIMES. KEEP BODY RELAXED DURING THE EXERCISE.)



Stand with left foot advanced.

Relax head, back and arms completely; let the body fall forward, arms hanging loosely.

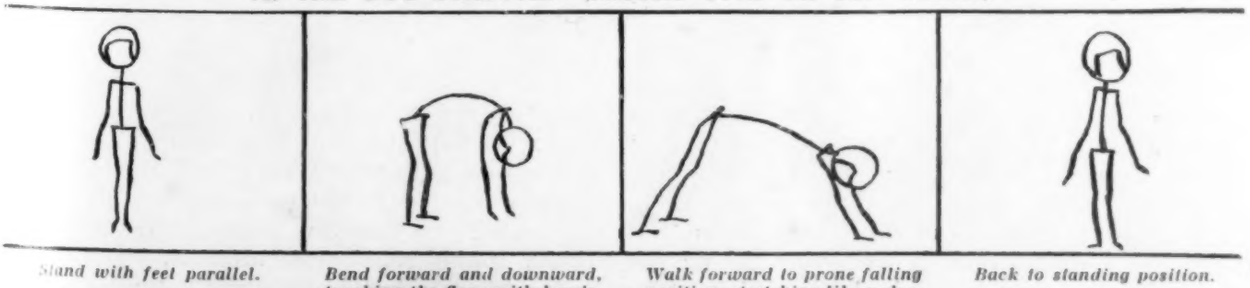
Raise the body upward to an erect position.

Let body fall downward again to the left, completing a semicircle.

V. FOLDING. (REPEAT FIVE TIMES.)

Object: To fold up as much as possible. Starting from an erect position, let the head fall forward and continue to pull downward, the rest of the body following—head, shoulders, upper back, etc.—until the head is almost level with the knees. Then kneel on one knee, then on both knees, continuing downward until head touches the floor. Finally let weight sink back on heels.

VI. THE DOG STRETCH. (REPEAT FIVE OR TEN TIMES.)



Stand with feet parallel.

Bend forward and downward, touching the floor with hands.

Walk forward to prone falling position, stretching like a dog.

Back to standing position.

at first, perhaps, while she is acquiring the skill necessary in the sport she has chosen; but if, after she has acquired a certain amount of skill, she is still under a strain and does not get relaxation through her exercising, there is no point in her continuing. The idea is that a girl forced to go on playing against her will cannot achieve relaxation because of the nervous strain resulting from her mental antipathy to the sport. A girl's exercise must be of her own free choice if it is to be beneficial to her. As a matter of fact, almost every student at Stephens goes in for one sport or another. The range of sports offered is so wide that it is an exceptional girl who can find nothing to her liking.

A special study of relaxation is being made in connection with the teaching of swimming and dancing. In its most beneficial form dancing is an outlet for the creative impulses that surge in every one; it is a release of these impulses through movements of a body at all times under the control of its possessor. Control does not mean tenseness, but a neutral situation in which each part of the body is relaxed yet in a susceptible state and ready for immediate reaction to any stimulus. The building up of control and the ability to localize one's activity without introducing tenseness are the goals of the dancing teachers.

Relaxation Through Swimming

In swimming, it was decided that tension among the beginners might be due to a number of things, among which were the temperature of the water, fear of loss of support, uncertainty of being able to manage the body in this new position, poor coordination, getting water in the eyes, swallowing or choking. These difficulties were met in the usual ways. As a possible aid to the release of tension the instructors tried the experiment of having the students swim to music, not necessarily keeping time to the music at first, but using it as an aid to smooth, unhurried performance. In the face float, instead of permitting a swimmer to push off with body stiff and tense, the instructors attempted to make each student feel as if she were "hanging out" in the water. Then, from this "hanging out" position, the swimmer was led gradually into movement until finally she was actually practicing a stroke. The object is to make swimming a relaxing exercise as well as a vigorous sport.

As a further possible means of relaxation, a set of relaxation exercises that are simple and can be learned in a short time have been worked out. These exercises are taught to every student who registers for physical exercise. They are not expected to bring relaxation to every girl who uses them, but they are taught to every one, for use or not thereafter as each individual may wish. The accompanying chart shows the six exercises composing the set.

On the grounds of nervous strain and consequent tension, the authorities at Stephens frown on intercollegiate competitions. Stephens does not enter into any competitions outside the bounds of its own campus. Sufficient excitement is generated in the intersorority and interhall contests to act as a spur to the best efforts of which the girls are capable. The campus contests give ample opportunity also for the development of good sportsmanship, good team work and cooperation.

Girls who are restricted in their exercise are given credit in gymnasium work for resting in the open air and for taking sun baths and light treatments. Cases of extreme nervous tension are often treated in this way. Provision is made at the college infirmary for the treatment of all such cases under the supervision of the college physician and the head nurse.

Relaxation Through Meditation

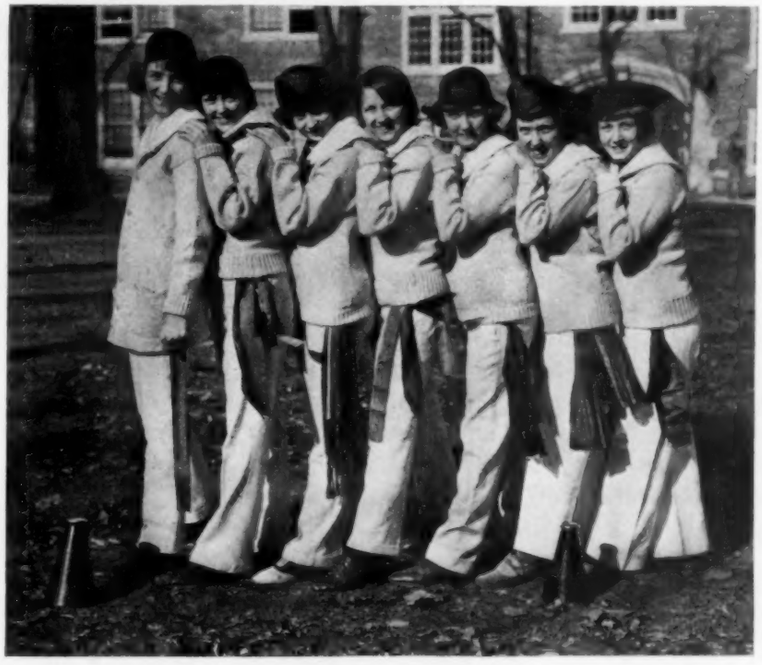
Another source of relaxation that Miss Haynes feels has great possibilities is meditation. Meditation does not mean silent prayer or an attempt to think about nothing. Meditation, as practiced by the students, is a quiet contemplation of some object or idea through which the meditator may become oriented, may release his tension, and so find relaxation and power. The starting point may be looking at the clouds, at a sunset, at trees or listening to the song of birds or to other music. From the starting point, whatever it may be, the meditator "spirals inward" until he loses himself in one certain thought (not necessarily the one he started out with) and in losing himself gets a spiritual reaction in which there is both power and relaxation. Meditation is concentration, but concentration that is pleasant and free from strain and such concentration makes for power.

Many persons assert that they find music relaxing. Some attempt has been made at Stephens to test this theory. The selection of music that will induce relaxation is a difficult problem. The music must stir the emotions in such a way as to invoke power rather than weakness. The same selection may have different effects on different people. Jazz music is obviously not relaxing. The second movement of Beethoven's "Fifth Symphony" is relaxing and at the same time strengthening to most persons. So, for some, is Beethoven's "Sonata Pathétique." Most of Gershwin's "Rhapsody in Blue" is not relaxing. The difficulty does not end with the selection of the right music. The surroundings in which one listens to music have some influence in determining whether or not the music will have the desired effect. Glaring lights make relaxation difficult. Too gaudy color schemes in the decorations hinder relaxa-

tion. A simple setting, softly lighted, seems to be best.

Of the various attempts of the authorities at Stephens to counterbalance the excitement and strain of college life, two have been unquestionably successful. One is the vesper service and the other is the siesta hour.

The vesper service is held twice a week, on Wednesday evenings after dinner and on Sunday evenings after tea, in the partially lighted auditorium before a stage furnished and decorated in simple good taste with such furniture, lamps, hangings and flowers as one might find in the living room of any artistic home. A musical program, usually by students in the college conservatory and sometimes by members of the conservatory staff, precedes a short talk by a member of the religious education department. It is a dignified service pervaded nevertheless by an informal, friendly atmosphere. Its very peacefulness is a source of relaxation.



Nine rahs and several yeas for the girl cheer leaders.

The Siesta Hour

The siesta hour is a Stephens innovation that has drawn interested and favorable comment from every section of the country since it was first tried two years ago. The word is taken, of course, from the Spanish and means, in more tropical climates, a period of rest or sleep during the sixth or hottest hour of the day.

At Stephens College the hour immediately after lunch, from 1 to 2 o'clock, has been set aside on every day in the week except Saturday and Sunday as the siesta hour. That is the one hour in the day, from the time the students get up at 7 o'clock in the morning until they go to bed at 11 o'clock at night, when they can be sure of undisturbed quiet.

Everything possible is done to make this hour a peaceful one. The dormitory doors are locked; maids are placed on guard to see that no one enters the buildings; the college telephone exchange is instructed to make no connections with the dormitories until the hour is over. The usual ringing of bells, slamming of doors, playing of phonographs, shouting and laughter cease so completely that the drop of the proverbial pin might be heard in any of the halls. So well is the restriction about noise observed that between 1 and 2 o'clock the dormitories resemble deserted buildings.

No hard and fast rules are laid down for the manner in which the students are to pass the siesta hour. The girls must be in their own bedrooms and they are requested not to study, but they may write letters, read fiction or poetry, or do whatever else they feel will be relaxing. They may undress and go to bed if they wish, or they may simply lie down and doze. The only absolute don't is the one prohibiting noise of any kind.

Since its inauguration in 1927, this plan of the siesta hour has been frequently submitted to the student body for a vote upon its continuance or abolition. The vote has always been unanimously in favor of continuance. There seems to be no doubt that the rest period after lunch is a desirable thing.

A Healthful Philosophy of Life

No one at Stephens is ready yet to say just what relaxation is or how successfully it can be taught. The study of the problem is continuing, and each year adds something of value toward its solution. The question has many ramifications, for beneath the whole idea of relaxation there is an undercurrent of something still more intangible.

Miss Maynes of Stephens believes that the ability to relax depends upon, or is the result of, a satisfactory, harmonious philosophy of life, and she is inclined to think that all attempts to build up the physical side of life and to teach physical relaxation are of no avail unless coupled with an attempt to develop in the students a healthful philosophy of life as a basis for their approach to all of life's problems.

ADENOIDS

By Emanuel Krimsky

Imitate this simple method of trying to breathe in with both mouth and nose closed. You feel an uncomfortable sinking in of the cheek similar to that produced by obstructing adenoids.

1. What are adenoids?

The adenoid tissue is a corrugated mass attached to the back and upper wall of the vault behind the nose and above the throat cavity; it is known as the pharyngeal tonsil. Adenoids are the enlargement of the adenoid tissue that normally exists in the nasopharynx of children.

If we were to pass an applicator along the floor of the nose, as shown in the illustration, it would reach the wall of the pharynx and stop; at the same time it would press against the adenoid body.

In the same way were it possible to pass an applicator through the ear canal and beyond it—that is, through the thin drum and through the narrow eustachian tube leading to the back part of the nose—it would meet the first applicator at the site of the adenoid body.

If the applicators were projected farther into the head in the same direction in which inserted they would meet in the back of the nose at the site of the adenoid tissue. It is easy to see how adenoid infection can travel outward through the ears and the nose, setting up trouble there.

2. How does the adenoid tissue change in size?

Like the tonsil, adenoid tissue is a normal component in every child. It is present at birth and increases in size with the growth of the child up to the time he is 7 years old. It remains the same size for a few years and then diminishes, so that it is usually small at 15 and has nearly disappeared at the age of 20. The tonsil, on the other hand, remains, usually with slight variations in size, throughout life.

3. What are the effects of diseased or enlarged adenoid tissue?

Some of the effects of hypertrophy of the adenoid tissue are as follows: (*a*) obstruction to nose breathing; (*b*) recurrent abscesses in the ears; (*c*) deformity of jaws and derangement of teeth; (*d*) anemia, pallor and poor appetite; (*e*) croup, and (*f*) mental dulness.

4. At what ages is the child most susceptible to adenoid trouble?

Adenoids are essentially a disorder of childhood. Rarely do adults suffer from the presence of adenoids.

5. What is the relation between adenoids and disease of the ear?

From the illustration in which an applicator is projected through the ear, it is easy to see

how an infection of the nose can readily reach the ear after settling on the adenoid tissue for a time. When a discharge from the adenoids into the ear is eliminated in time, there is permanent improvement in the ear trouble.

6. What is the relation of adenoids to croup?

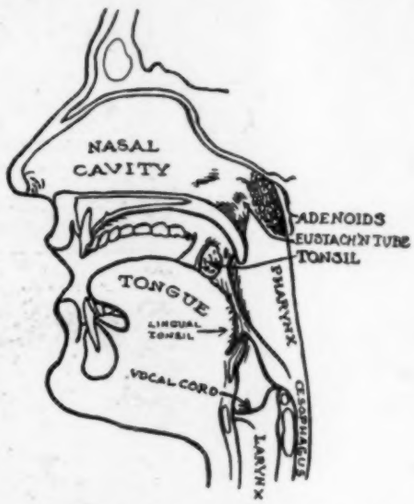
A large percentage of croupy children—not the diphtheritic kind—are affected as a result of an irritating discharge of mucus from adenoids dribbling constantly onto the surface of the vocal cords. Diseased adenoid tissue may be compared to a sponge.

7. What is the relation of adenoids to nose obstruction?

Obstruction in nasal breathing depends on two factors—the size of the adenoids and the size of the vault of the throat. Some children have large throat cavities, or resonating chambers, and it takes large adenoids to produce obstruction to nose breathing; whereas in other children, small adenoids close the air passages from the nose.

8. What is the relation of adenoids to deformity of the jaws?

Let us close our nostrils tightly and try to inhale air through the nose. We immediately feel an unpleasant sensation as if the cheeks were sinking in. One can readily see how a child with jaws still soft and undeveloped responds unfavorably to any obstruction in the nasal cavity such as adenoids. With this sinking in of the jaws the teeth suffer from derangement and poor development.



A diagram showing how intimately related are the ears, nose, tonsils and larynx to adenoid tissue. (From Martin Ross.)

9. What is the relation of adenoids to mental dulness?

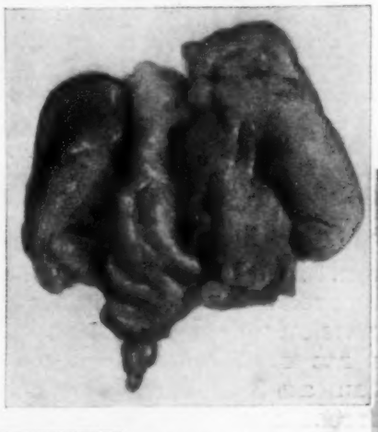
If a person remains in a poorly ventilated room for a short time he feels dull and lazy. If he were to remain in such an environment constantly, the effects would no doubt be permanent. A child with an obstructed nose is the same as a child in poorly ventilated surroundings. He is suffering from lack of ventilation.

10. What is the relation between adenoids and running nose?

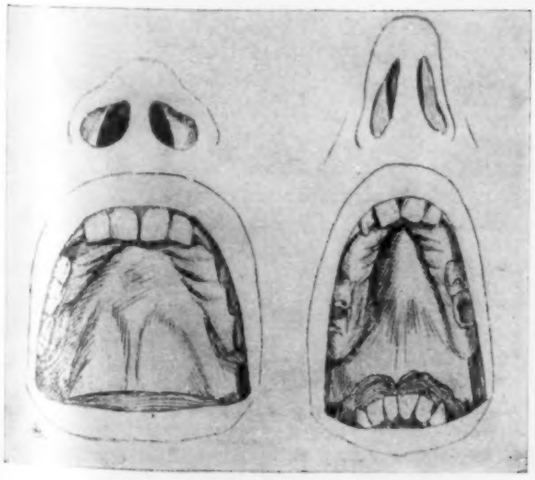
Adenoids have been compared to a sponge; they express an irritating mucous discharge downward to the voice box, forward through the nose, and outward through the ears. A running nose, therefore, is usually due to diseased adenoids.

11. What is the best method of dealing with adenoids?

There is only one method of dealing with adenoids—operation. It is simple, rapid and practically always devoid of danger. Improvement is striking in most cases.



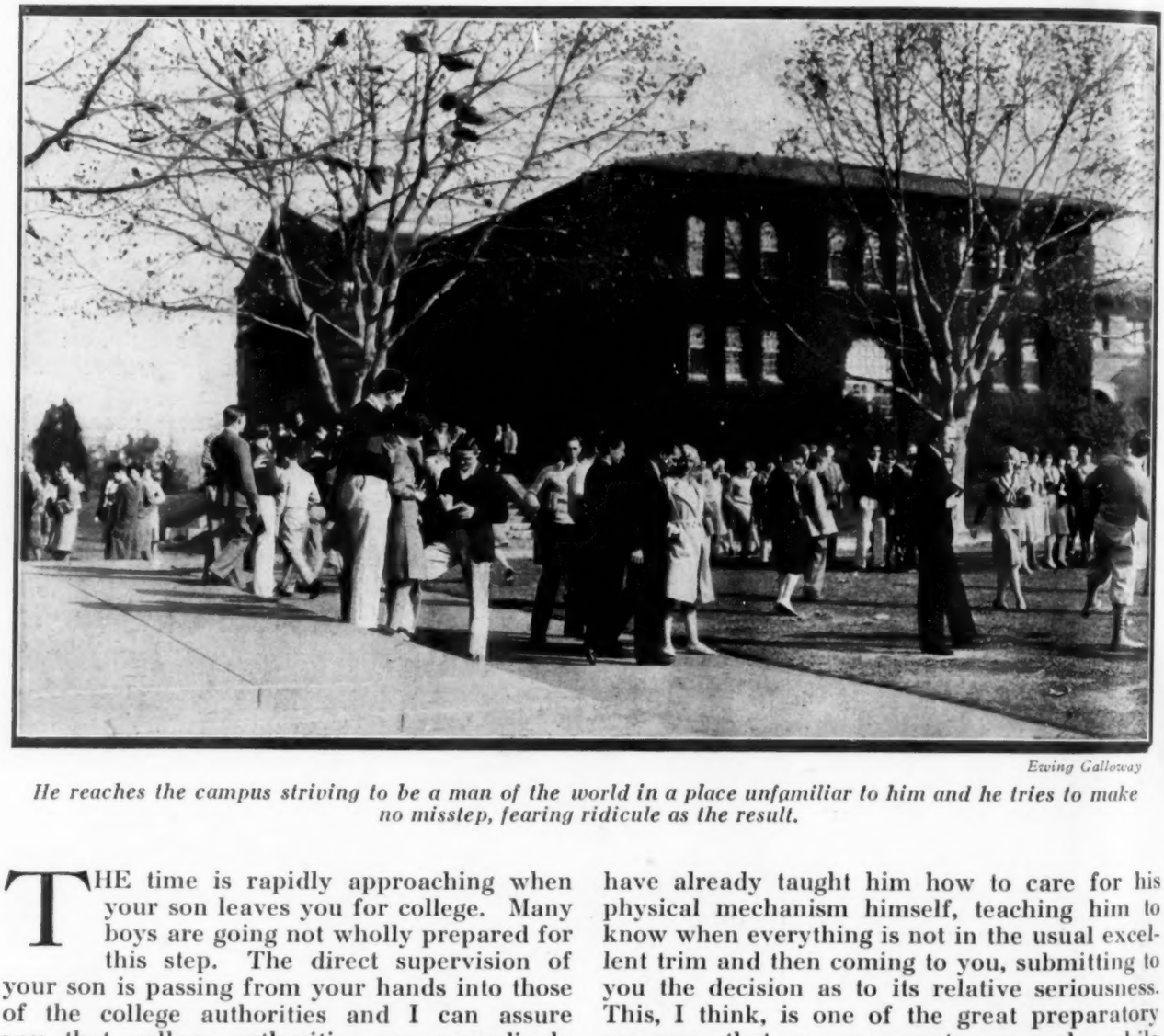
The irregular appearance of adenoids. Enlarged two times. (From Sluder.)



At the left is a diagram showing the contrast between a normally shaped jaw and one affected by long standing nasal obstruction. (From Waggett.)

At the right, the typical adenoid face, with drooping jaw, sunken cheeks, and dull expression. (From Ballenger.)

Your Son Enters College



Ewing Galloway

He reaches the campus striving to be a man of the world in a place unfamiliar to him and he tries to make no misstep, fearing ridicule as the result.

THE time is rapidly approaching when your son leaves you for college. Many boys are going not wholly prepared for this step. The direct supervision of your son is passing from your hands into those of the college authorities and I can assure you that college authorities are exceedingly interested in his welfare, constantly endeavoring to make his four years' stay in college a happy and profitable one.

Practically all the up-to-date colleges today have a student health department, the function of which is to safeguard the health of the student during his four years' college stay and to give him such standards as will insure lifelong healthful living.

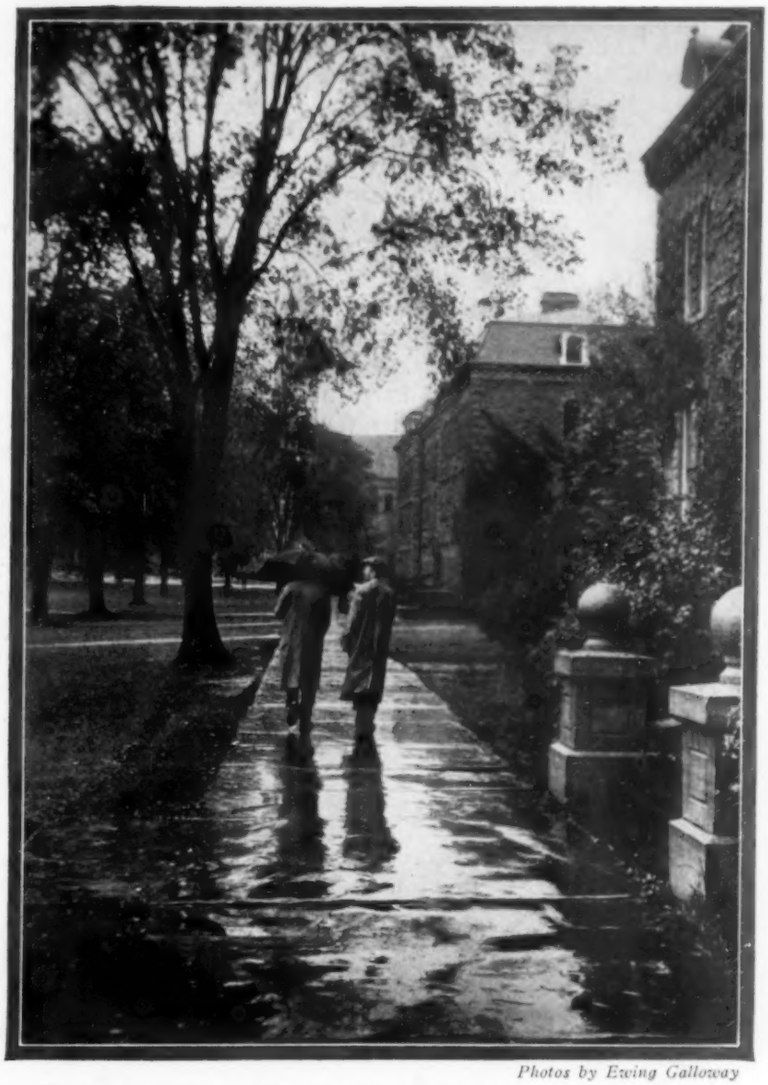
From the standpoint of a college physician, the best insurance for health during the student's collegiate course is the preparation made by his parents during his precollege days. Up until now, you have seen your son every day and have noted personally any change in his physical well being. You have been wise if you have already taught him how to care for his physical mechanism himself, teaching him to know when everything is not in the usual excellent trim and then coming to you, submitting to you the decision as to its relative seriousness. This, I think, is one of the great preparatory measures that you as parents can make while your son is in the secondary school. He soon enough will have to do his thinking and planning for himself, and the sooner this process is started the stronger physically and mentally he will be.

The college physician only too often sees the student improperly caring for himself and, while every effort is made to teach him the right methods of living, many of these are wasted because of the disregard of the average young man of 18 for health rules. He is now passing through the healthiest years of his life and he cannot see the need or advantages of preparing and fueling his machine for the life run of fifty years more. His excess energy is so great that he cannot realize that if the reserve

By M. L. Ilsley

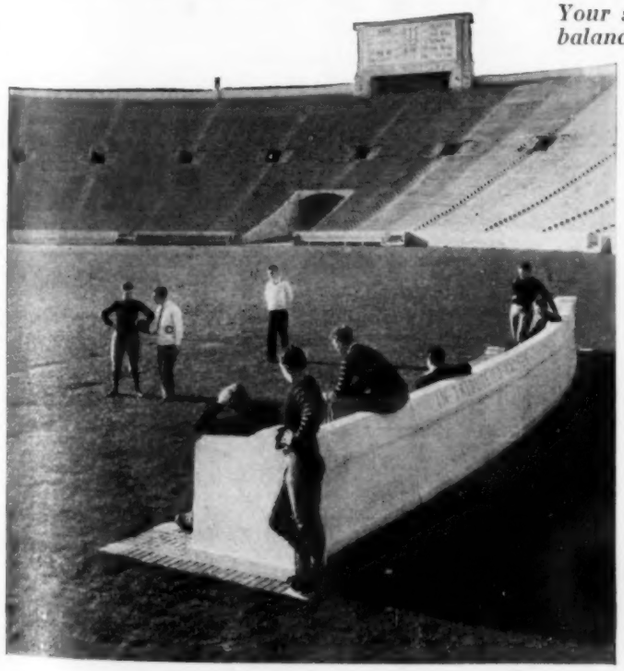
is used up in college, the later years are likely to be lean indeed from a health standpoint. The college physician wishes to save him the painful experience of having to learn how to preserve health at the expense of having first lost it through some prolonged disabling illness.

Your son has probably led a pretty well regulated life, has become accustomed to the home climate. Suddenly, at the beginning of the freshman year, he finds himself perhaps in a different country or state; or perhaps the college is at some distance from a large city and he must become accustomed to small town life. Certain it is that the balance of his indoor and outdoor life will be changed. Formerly, practically all his classes were in one building and now, with no two of his classes in the same building, thoughtless exposure is likely to result. He reaches the campus striving to be a man of the world in a world unfamiliar to him and he tries to make no misstep, fearing the resulting ridicule. The much greater amount of unsupervised leisure time to devote to things other than studies gives him an unparalleled opportunity for wise or unwise allotment. Wise is the man who devotes a considerable portion of this unsupervised time to developing his body.



Photos by Ewing Galloway

Your son may find himself in a new climate; certainly the balance of his indoor and outdoor life will be changed.



The modern sport era at college has largely replaced the ridiculous hazing and prank era.

While your son is in secondary school, he should be trained to bring unsolved health problems early to a higher authority such as parent or family physician. Thus, when reaching college, he will realize that the health department stands willing and ready to help him, that it really prefers that he come early with his problems rather than late, for it is obvious that illness attacked early is a much easier battle to win. No matter the triviality of the illness, if your son is in the slightest doubt about its immediate curability, early consultation with the health department should be the aim.

Experience has shown that the heavy underclothing of yesterday causes more colds than it prevents, and still many boys enter college literally loaded down with this drag on their health. We live for the most part in a summer

atmosphere, even in the severest winter weather. How much more sensible it is to provide proper outer garments to be put on only when exposed to the actual rigors of winter than hermetically to seal up the body at a season when it should be given as much freedom as possible so as to counteract the natural sluggishness brought on by cold weather. It seems to be the changes in temperature from day to day that cause a great deal of the illness and this can best be combated by means of a vigorous body, proper changes of outer garments, and adequate knowledge and observance of health rules.

So, teach your son first to come to you with any physical ailments and then, during secondary school years, teach him how to make his own decisions wisely as to the utilization of his physical energy. Teach him that most sports are excellent builders of reserve energy, teach him that certain other activities, if indulged in to excess, lead only to sapping that precious reserve energy. Every boy, at least by the time he leaves college, should be able successfully to compete in at least one sport, preferably one in which he can engage in later years.

Sports Replace Hazing

The modern sport era at college has undoubtedly largely replaced the hazing and prank era. In place of the occasional hazing "rough house" of former years when freshmen and sophomores got together while the upper classmen spurred them on for their own amusement, the majority of the students each afternoon are found practicing and playing their favorite game. Keen competition is built up and an asset valuable for use in later adult life is fostered.

This practical side of the activities of the physical education departments has not received the attention and financial support that it deserves. It is here that the great mass of attention is given by physical education departments in most of the colleges. Instead of the haphazard courses of fifteen or twenty years ago, a really constructive program has been worked out, sifting and sorting out the athletically adept from the other men physically fit and from those physically unfit.

The average gymnasium class nowadays affords a much pleasanter hour's exercise than formerly; games and sports sugar-coat the necessary exercise so that, in most cases, the hour passes quickly. A great deal of the self-consciousness of the inadept has been removed so that all those physically able can and in most cases do wholeheartedly enter into the organized athletic endeavors of the college. The attitude of the college authorities has changed from an indifference to athletics to a frank cooperation, for they realize that it is a useless waste of time to train a mind in a physically unfit body.

Your son must needs have something more than an adequate wardrobe when he reaches college. Many of our colleges suggest or require a preentrance physical examination. It is always much pleasanter and more effective to have the family physician rather than some stranger recommend, if such is the case, that your son's eyes need glasses; that his tonsils should be removed; that he should visit the dentist; that he should above all things eat proper foods regularly and with a proper regard to an adequate menu.

Need Good Breakfast

Many students, for various reasons, omit breakfast from their collegiate lives. Various excuses are offered but none gloss over the fact that two meals a day are insufficient to care for the needs of a man transforming cartilage into bone, adding the last few inches to his stature, preparing his physical mechanism for a fifty year grind. Teach him or have him taught the method of properly evaluating things for, after all, he has a lifetime ahead of him and foolish expenditure while in college of those precious physical reserves will literally tend to bankrupt the later life. Sleep for many of the students is a commodity too little indulged in and should receive more attention.

College life for most boys is entirely different from home life and such should not be the case in a certain sense. Health habits of the right sort should be so firmly rooted in each boy's life that the temptation to go without sleep could never occur; that improper diet eaten in a haphazard fashion would be considered the evil that it is; that adequate exercise would be an absolute necessity for healthful living. His previous training in health matters should have been so fundamental and sound that transgressions of the true health rules would be recognized instantly as the sin that it really is.

The individual, at some time in his life, must assume his individual responsibility for his well-being and, for the great majority of college graduates, this parting of the ways occurs at the beginning of the freshman year. Wise indeed are the parents who transfer this responsibility while the boy is in the secondary school—foolish if they attempt to prolong it into college days. If this responsibility is transferred during secondary school days, the parents can wisely guide the boy through the troublesome time and can show him possibly by the method of trial and error the really best form of healthful living for his particular case. Instead of having to find all this out for himself during the first semester of the freshman year, and often to his sorrow, the quiet influence of the wise parent points the way so that the lesson is learned without the crippling effects of disease.

SIMPLE LESSONS *in* *Human Anatomy*

By B. C. H. Harvey

LESSON VII

General Plan of Structure of the Human Body

SKIN, connective tissue, muscle and bone constitute the limbs and the body wall. After studying them, the natural procedure is to study the internal organs, or viscera, and the body cavities that they occupy. It is necessary in such a study to see how the viscera are related to the body wall and to consider the general plan of structure of the body.

There is a definite plan by which all these parts are built up together into a complete living body—a body in which the parts work together, each helping all the others, and all together making a single organism that can see and feel and move and procure its food, that can mend its injuries and reproduce its kind, that can keep active and healthy by its own powers.

Much light has been thrown on the plan of structure by comparative anatomy of vertebrate animals and by embryology, for one common plan appears in the bodies of all vertebrates, and this plan is so clearly apparent in the early stages of their development that it is not easy to tell the bodies of mammals apart till they reach the later stages of their growth (fig. 59).

The structural plan appears with the greatest clearness in the thorax and abdomen, and it is more evident in the embryo than in the adult. Figure 60 shows this plan. The diagram is made from an embryo, and it shows two stages of development. On the right is the earlier stage; on the left is a stage farther advanced. Actually, of course, both sides of any developing body are equally advanced at any one time.

The essential structures are: (*a*) a membrane, which encloses the entire body—the skin of the embryo. This membrane is called the ectoderm (meaning outer skin); (*b*) a tube, the spinal cord, which runs lengthwise in the dorsal (back) part of the body; (*c*) a rod, the notochord, which runs lengthwise along the central axis of the body; (*d*) a tube, the intestine or alimentary canal, which runs parallel to the notochord in the ventral (abdominal) part of the body; (*e*) the intermediate mass, the mesoderm; and (*f*) the intermediate fluid, the mesenchyme.

There are thus three structures running lengthwise in the median plane of the body—a rod, the notochord, along the central axis; one tube, the spinal cord, dorsal to it, and another tube, the alimentary canal, ventral to it. On each side of the median plane, between these three structures and the ectoderm, lies the inter-

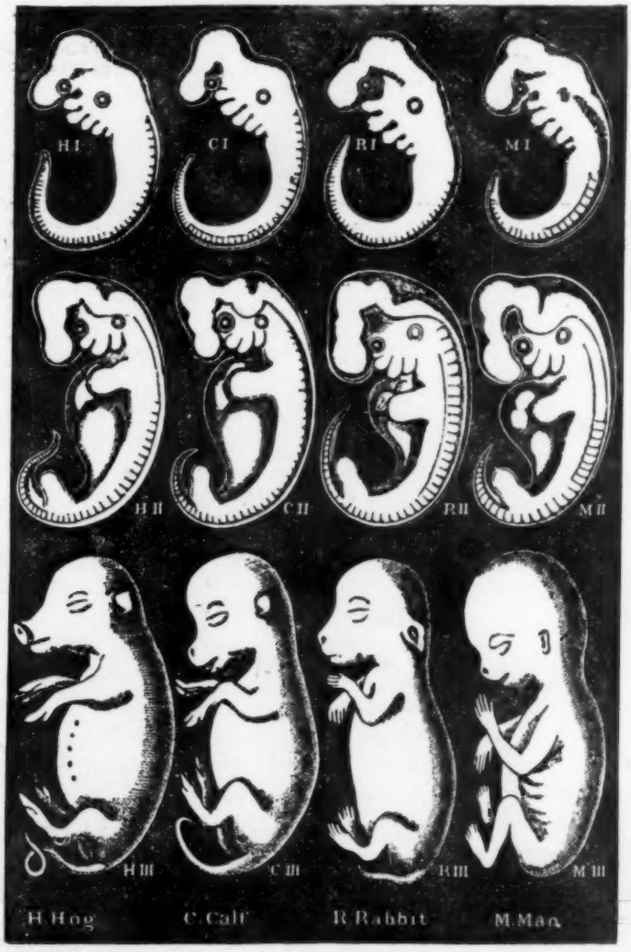


Fig. 59.—Embryos of hog, calf, rabbit and man, each at three stages of development. They are much alike, even to the tail in the human embryo. (From Ernst Haeckel, Evolution of Man, Vol. 1, D. Appleton and Company.)

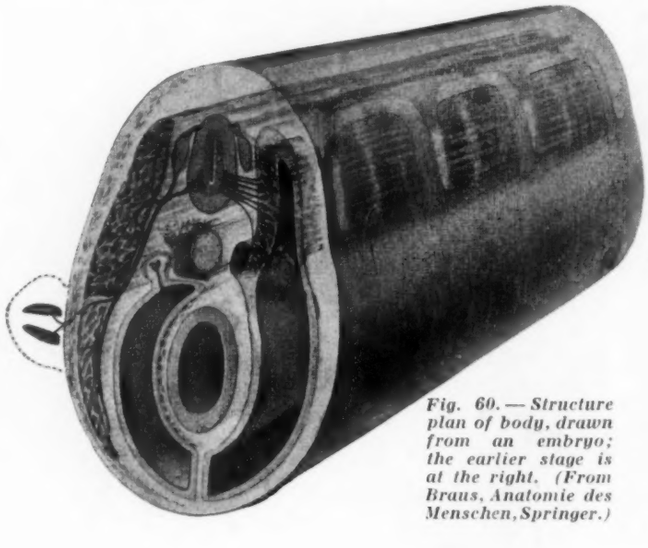


Fig. 60. — Structure plan of body, drawn from an embryo; the earlier stage is at the right. (From Braus, Anatomie des Menschen, Springer.)

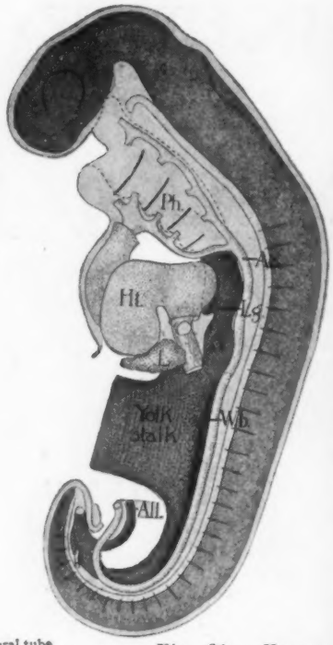


Fig. 61. — Human embryo, five weeks old. Ph, pharynx; S, stomach; Lg, lung; Ht, heart; Ao, aorta. (From Morris, Human Anatomy, P. Blakiston's Sons & Co.)

Fig. 62. — Adult spinal cord viewed from the right side. (From Spalteholz, Human Anatomy, Herzil.)

Fig. 63. — Spinal cord lying within vertebral column, which has been opened from behind. (From Toldt, Human Anatomy, Macmillan.)

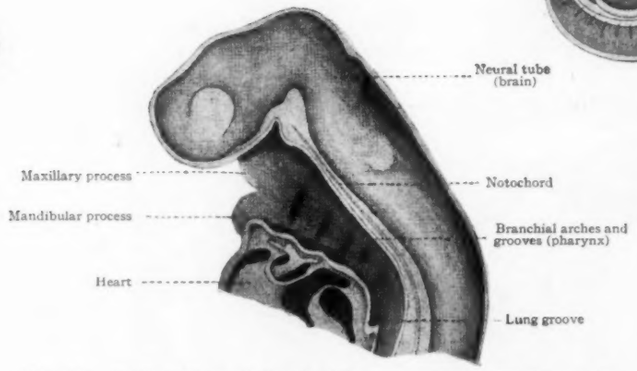


Fig. 64.—Section through head of human embryo, 32 days old. (From Bailey and Miller, Embryology, William Wood & Co.)

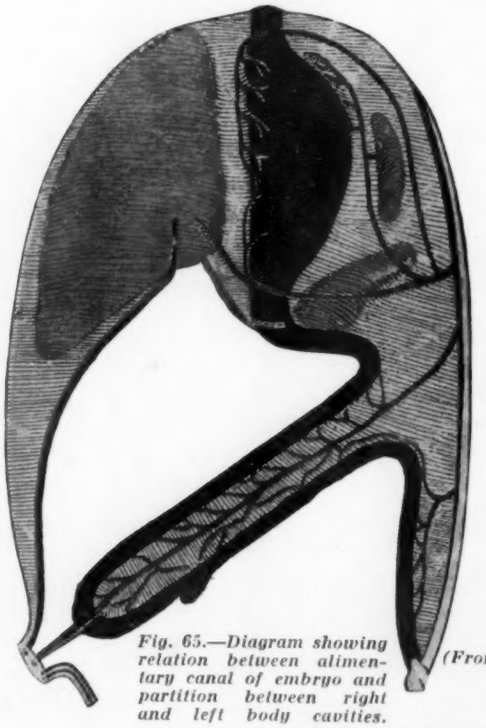


Fig. 65.—Diagram showing relation between alimentary canal of embryo and partition between right and left body cavities. (From Morris.)

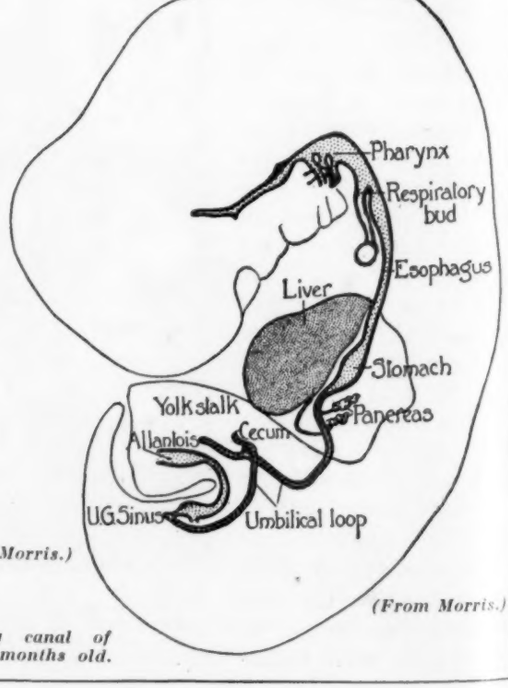


Fig. 66.—Alimentary canal of human embryo, 3½ months old. (From Morris.)

mediate mass, or mesoderm. This forms a considerable pad of tissue on each side, extending from the dorsal to the ventral part of the body. It is hollow, for a cleftlike cavity appears in the center of it, separating the mesoderm into outer and inner layers. The cleftlike spaces between are called the right body cavity and left body cavity respectively. These four structures that lie within the embryonic skin do not take up all the room. They are separated from one another and from the ectoderm by chinks and clefts and irregular spaces of considerable size. These are not empty, but are filled with mesenchyme, or intermediate fluid (not shown in fig. 60). This is not pure fluid, for it contains branched cells connected together by their branches to form a loose, spongy fluid tissue that extends into all nooks and crannies and into all the intercellular spaces in the definitely formed structures.

These are the six fundamental parts of which the body is made. Everything in the body is just one of these parts or a modification or a derivative of it. The fundamental relationship of these parts to one another is shown in the diagram which thus indicates the general plan of structure. We shall now follow each of them forward and backward, toward the head and toward the tail, mentioning some special modifications in different regions.

The ectoderm, or embryonic skin, forms the epidermis or superficial layer of the adult skin. Following it toward the head and tail we find (fig. 61) that it encloses the other structures like a closed sack. It is thickened on the palms and soles. It is transparent in front of the eyeball. It grows hair and nails and sweat glands in places (see article on the skin in the January number). But along the middle of the back of the head and trunk it is thickened and folded in to form first a trough and then a tube; thus the neural tube is formed from the embryonic skin.

The neural tube, or central nervous system, extends the whole length of the body. It has in the adult thick walls and a small central canal. It is much bigger at the head end, where it constitutes the brain, than in the trunk, where it constitutes the spinal cord. It consists of a series of segments connected lengthwise. This is apparent from the first. The young neural tube has a beaded outline, each bead making one segment. Then a pair of nerves grows out from each segment—one right nerve and one left one (figs. 60 and 62).

There are thirty-one segments in the spinal cord, and thirty-one pairs of nerves grow out from it. Twelve pairs of nerves grow out from the brain. As they grow they feel their way along among the structures. Ross G. Harrison of Yale University has shown us how we can watch them extending hour by hour, branching as they go. Ultimately their ends reach the skin, the alimentary canal, the muscles, the eye, ear and nose, and every other structure in the body. Whatever goes on within the range of our senses, either inside or outside our bodies, affects these nerve ends; the nerves carry a message to the central nervous system and we have our sensations. But sensation is useless unless it leads to appropriate action. The same nerves bring about the action. Each spinal nerve has two roots, one dorsal and one ventral (fig. 62). The dorsal root brings in information, and the ventral one carries out to muscles stimuli that provoke the action desired.

The neural tube terminates at the tail end by tapering rather suddenly to a point. In the adult man this point is about 2 inches below the twelfth rib. Below that there is no spinal cord (fig. 63).

When first formed the brain and cord have no covering except the epidermis and the fluid mesenchymal tissue (fig. 60). The skull and spinal column and the tough deeper layers of the skin have not yet been formed.

The notochord terminates headward in a blunt end under the middle of the brain (fig. 61); tailward it extends to the tip of the vertebral column. It is a flexible rod. In the most primitive fishes, which have no bone, it is useful in their swimming movements. In higher vertebrate animals, including man, it is of no use in the adult. It runs through the centers of the bodies of the vertebrae, like the cord through a string of beads, and remnants of it appear in the centers of the cartilaginous disks that lie between them. In the embryo it gives a certain amount of rigidity to the body and later serves as a frame around which the column of vertebral bodies grows.

The mesenchyme, which fills all spaces between the parts, even extending into many intercellular spaces, forms the connective tissues, the blood, the arteries, veins and lymph vessels, and the heart. Thus it binds the parts together, surrounds the cells with fluid, carries nourishment to living cells and removes the waste produced by their activity. Many of its cells remain free and swim about independently; they are scavenger cells and they remove the remains of dead cells and foreign matter such as dirt and bacteria which may gain entrance.

The alimentary canal extends headward under the notochord as far as the back of the mouth cavity. The head end of it is enlarged to form the pharynx (figs. 61 and 64). It extends backward almost but not quite to the tip of the vertebral column, where it joins a depression of the epidermis to form the anus (fig. 61). The alimentary canal runs straight through the neck and thorax, forming the gullet. The part that is within the abdomen is dilated at its upper

end to form the stomach. The rest forms the intestine, or gut. This becomes greatly elongated, attaining a total length of nearly 30 feet. It is therefore much folded. But it preserves the relations shown in the diagram, remaining always in the partition between the two mesodermal sacks, even though the partition also becomes wrinkled and folded.

Several outgrowths from the intestine grow off from it in the neck and abdomen. In the neck these are the thyroid gland, the parathyroid glands, the thymus and the breathing apparatus. The thyroid gland and the two parathyroids remain in the neck, lying close to the pharynx. The thymus gland extends through the lower part of the neck into the thorax, and the breathing apparatus is mostly in the thorax. The latter grows off the gullet high up in the neck as the larynx, extends down in front of it to the middle of the thorax as the trachea (fig. 66) and there grows out to each side as the huge lungs, which fill the thoracic part of both the right and left body cavities of the embryo. In the abdomen two outgrowths extend from the gut anteriorly, and two grow posteriorly toward the notochord (fig. 66). The liver is an outgrowth that extends anteriorly into the persistent upper anterior part of the partition between the two body cavities of the embryo (fig. 65).

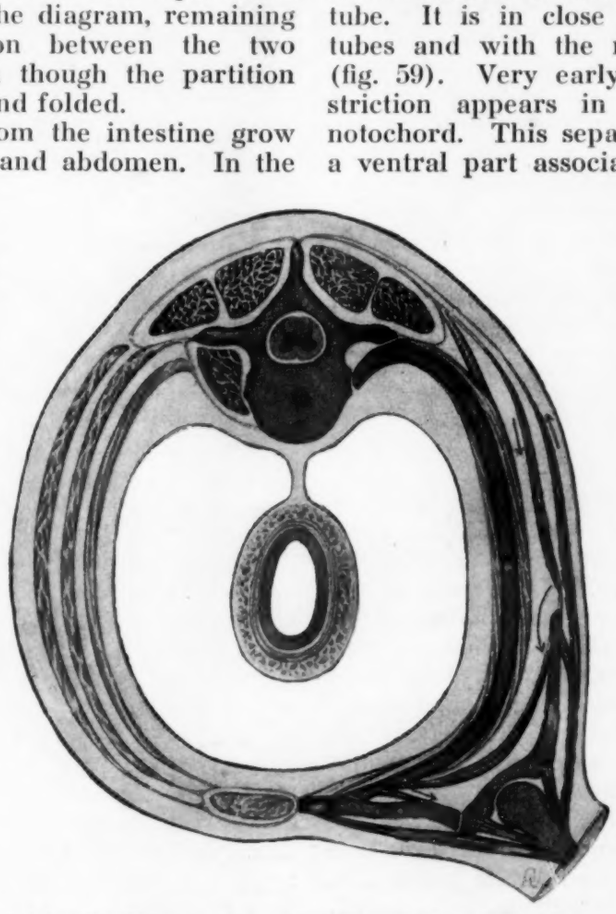


Fig. 67.—Diagram of a section through the adult human body; at the right, the thorax; at the left, the abdomen. Limbs and bony limb girdles are superficial to the body wall. (From Braus, Anatomie des Menschen, Springer.)

The lowest part of the embryonic intestine splits into two parts lengthwise for a short distance. The anterior one of the two tubes so formed becomes the urinary bladder and urethra, which are thus only a part of the intestine separated off from the rest. Two other outgrowths from the upper six inches of intestine unite to form the pancreas. It extends posteriorly into the upper part of the partition between the two body cavities of the embryo (fig. 66).

The alimentary tube differs fundamentally from the neural tube in one important particular: It never shows any trace of segmentation whereas the spinal cord has thirty-one clearly marked segments in the neck, thorax and abdomen.

The mesoderm constitutes a hollow pad lying along each side of the body throughout its length. Its margins extend dorsally beyond the neural tube and ventrally beyond the alimentary tube. It is in close relation with those two tubes and with the notochord between them (fig. 59). Very early a long horizontal constriction appears in it just ventral to the notochord. This separates the mesoderm into a ventral part associated with the alimentary tube and a dorsal part associated with the neural tube.

The ventral part is split into two layers (fig. 59, left side). The cleft between is the body cavity. The inner layer becomes closely connected with the alimentary tube. In the abdomen this tube consists of only one single layer of cells; it is the mucous membrane of the stomach and intestine. The other coats of the intestine, muscular coat and the like, are formed from the two adjacent inner layers of the two mesodermal cavities (fig. 59, left side). Dorsal and ventral to the alimentary canal these two layers come close together and form double membranes like two-ply layers of cotton sheeting. The alimentary canal is placed like a tube between two sacks which are closed up at both ends and inflated (fig. 60). Vessels and nerves run between.

In the lower part of the abdomen, the part of the partition in front of the intestine, between it and the anterior abdominal wall, is missing. Thus the stomach and the upper six inches of intestine are attached to both the dorsal and ventral walls of the abdomen, whereas the remainder of the intestine (that is nearly all of it) is suspended only from the dorsal wall (fig. 65), and the right and left body cavities of the embryo are continuous with each other in front of the gut (fig. 67). In the upper part of the abdomen and in the thorax the right and left body cavities of the embryo remain separate. In the neck, both right and left cavities close up; their two walls fuse and so there is only one membrane formed by the ventral mesoderm.

The outer wall of the body cavity of the embryo never becomes anything but a simple

membrane—the pleura in the thorax, the peritoneum in the abdomen. This membrane at first is close to the ectoderm, or epidermis, but later becomes separated from it by the body wall which grows around from the back, wedging its way in between those two layers.

The dorsal part of the mesoderm, when separated from the ventral part, remains closely associated with the neural tube. Like that tube, it becomes divided into segments (fig. 59, right). The dorsal mesoderm thus looks like two rows of hollow bricks, one on each side of the spinal cord. There are thirty-one segments of the spinal cord, with thirty-one pairs of nerves growing off from it, and there are thirty-one of these hollow bricks on each side of it. Into each of these hollow bricks grows one of the nerves. From these hollow bricks the body wall is formed (fig. 59, left). It consists of bone, muscle and the deep, tough layer of skin. All the bone, muscle and dermis of the thorax and abdomen are formed from them. Each grows a bandlike process forward, extending around the body cavity of the embryo and the gut; each grows a bandlike process backward around the neural tube; each grows a process medialward to the notochord, which becomes the body of a vertebra (figs. 60 and 67). Thus the bone, muscle and dermis of the wall of thorax and abdomen are formed in a series of strips, like a gridiron; this is apparent in the adult in the ribs and the intercostal muscles. Always all the structures formed from one dorsal mesodermal segment are innervated by the nerve of that segment. However much each grows, it never grows away from its original nerve; the nerve grows along with it.

The processes of bone that grow backward meet behind the spinal cord enclosing and protecting it and forming the dorsal arch of each vertebra. Those that grow forward make the ribs. The latter are short in the abdomen and neck, seldom being more than an inch long.

The bands of muscle that grow backward make the mass of muscle on each side of the vertebral column behind. Those that grow forward make the intercostal muscles. In the abdomen where the ribs are short the muscle bands fuse at their margins with one another and make broad sheets of muscle, which become distributed into three layers (fig. 67).

The bands of dermis apply themselves to the inner surface of the ectodermal sac, or epidermis; they fuse at their margins and so make a continuous layer of dermis over the thorax and abdomen.

Between the muscle layer and the dermis is an interval which the mesenchyme fills. This is the superficial fascia described in the February number. The limbs are formed in it entirely; the bones of the limbs and the bony shoulder girdle and bony pelvic girdle (fig. 67) are simply modified superficial fascia. So are the limb muscles. The skin is stretched over the growing limbs, and nerves and arteries grow into them. But they are essentially superficial, lying outside the body wall. Tailward the mesoderm extends a little way behind the pelvic girdle, and there the pads of the two sides taper and come together to form the funnel-shaped posterior end of the body wall. The muscle in it is the funnel-shaped pelvic diaphragm. The stem of the funnel is formed by the anal canal.

When we follow the mesoderm toward the head, an interesting fact appears. The head consists at first only of the enlarged anterior ends of the two tubes making the brain and the pharynx. The upper end of the notochord lies between (fig. 64). Only the epidermis surrounds them. Then the mesoderm grows up around them (fig. 68). The ventral mesoderm forms a cover for the pharyngeal mucous membrane. From it are formed the muscles and bones of the face and the jaws and the tongue bone. The dorsal mesoderm grows up around the brain to form the skull and the membranes that cover the brain inside the skull. Division of the dorsal mesoderm into segments stops at the upper part of the neck. There are no segments in the head. Neither does the dorsal mesoderm send processes around the pharynx. There is no body wall in the head. The top of the body wall is the top of the neck. The neural tube and alimentary tube stick up beyond its top and up there in the more exposed region the neural tube forms brain and special sense organs—eye, ear and the part of the nose which smells. The upper part of the alimentary tube, or pharynx, covered by its ventral mesoderm projects above the body wall to the surface and an opening is formed, the mouth.

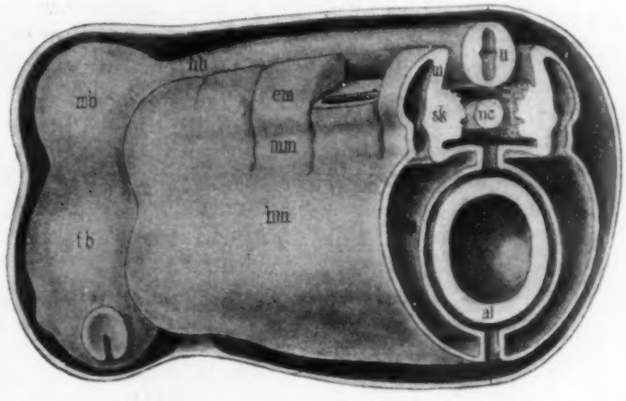


Fig. 68.—Plan of structure showing the extension of the mesoderm toward the head: n, neural tube; nc, notochord; sk, developing body of a vertebra; al, alimentary canal; hm, ventral mesoderm, not segmented; em, dorsal mesoderm, segmented; mm, constriction separating dorsal from ventral mesoderm. (From Kingsley, Anatomy, Blakiston.)

Teaching the P

By Hugh Grant Rowell

IN EVERY community a certain number of children of school age possess, either at birth or from some later date, physical handicaps that incapacitate them to some degree in the ordinary affairs of life. To the schools, such pupils present special problems, since to no small extent the community expects the school to fit such children for social and economic life, as well as to teach them the familiar three R's.

The most typical examples of such physically handicapped children are the hard of hearing, the semiblind, and the pretuberculous and post-tuberculous groups. Others include the crippled, the deaf, the blind.

Some Must Go to Institutions

The first point to be decided about any child is, of course, whether or not he is an institutional case. In other words, is the defect so incapacitating that a long and highly specialized educational process will be necessary if the child is to lead anything but the life of a dumb animal? Deaf mutes and the blind require institutional care for some years, and it is generally agreed that the placement of such children in institutions should begin as early as possible, long before school days. Many such children are released later for a most satisfactory participation in everyday life, having received suitable specialized education and vocational guidance.

Yet it seems positively true that any child sent to an institution, however excellent, must pay a price for such training, this cost being in terms of social contacts with normal persons. It is to get such contacts, to rub shoulders with the world in general, that such children are sent back into the world as soon as practicable. Such pupils usually keep in close touch with their training institution, which to them is indeed a haven of refuge and friendship. In most instances the graduates of specialized institutions are not entirely independent and frequently lean to some degree on other persons for full social contacts, the examples being the completely deaf and the blind, to whom the world must be interpreted or whose contact with the world must be maintained through other persons.

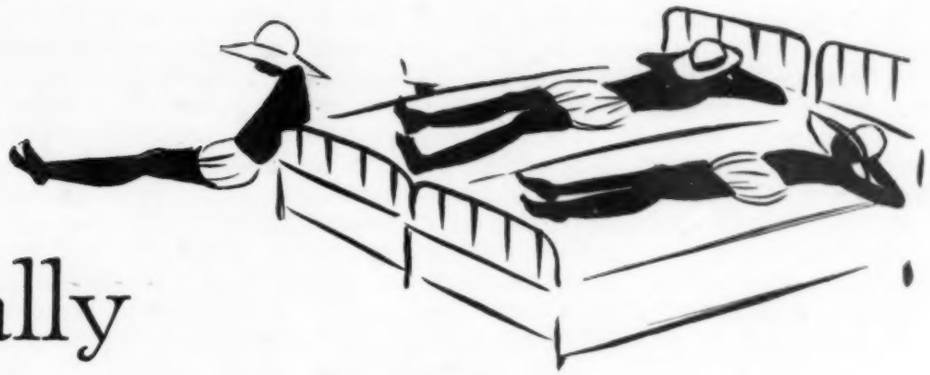
Others Can Be Taught in Special Classes

It seems obvious that the first type of case, the institutional, is outside the province of the public school. There is a second type of child, neither normal nor institutional, for whom the school has already accepted educational responsibility.

The methods now used in schools for educating the second type of child are almost entirely the result of the efforts of certain propaganda organizations that have presented the needs of the semiblind, the deafened, and the pretuberculous and post-tuberculous to educators and that have assisted both financially and by counsel in developing whatever provisions are now made for these physically handicapped children.

The methods in vogue have been developed through expert advice and through trial and error. To what degree such methods are really attaining results is often difficult to state. It has been necessary to set up the whole field on a somewhat empirical basis. Nevertheless, if one can believe what one sees and what others see, much good is being done and the work is profitable to child, school and community.

Two difficulties have slowed progress: (1) failure of authorities to agree on stand-



Physically Handicapped Child

...rds of admission, release and educational progress (one is tempted to say, failure to agree on objectives) and (2) lack of trained teachers.

Admission to these special classes is made on varying standards, most of them empirical. Release is made either because the child has attained all the education possible in the class or because for some reason some person in authority has decided that the child is no longer suitable for the classes, because health has been restored or because the defect has progressed too far.

Objective of Special Classes

The objective, roughly stated, has been "health first" and this applies to mental as well as to physical health. A further objective has been to socialize the child, and this has led to the discarding of segregated classes as far as is practicable and to the attempt to teach certain subjects only in the special class, the other subjects being taken with normal children. This is of particular advantage in the case of the deafened, who are thus able to practice their lip-reading lessons in an actual life situation. For obvious reasons, socialization is least possible in the fresh-air type of class. Experience has shown that segregation tends to develop either an undesirable aristocracy or a plebeian group out of the special class, depending on what point of view the teacher is able to develop in the pupils. (What is needed, indeed, is that such children forget about their handicaps, in terms of social relationships.)

It has been stated, and probably wrongly, that it is possible to keep children in these promotional groups "up to grade." If that is true, then these children are brighter than average, or regular school pupils are loafing and not taught to capacity, or else the special class pupils are being driven beyond their physical capacity and the whole aim of the special classes is thus defeated. The teacher who drives a fresh-air class can do them just as much harm as the parent of the pupil in the fresh-air class who asks that the child be sent home early to carry father's lunch a mile or so to the mill.

That trained teachers are lacking is no fault of the propaganda organizations or of the school systems. It is plainly the fault of the lack of organization in the whole field and of teacher training institutions, which until recently have made no provision for training such teachers. This may be said in defense of the educational institutions, that they do not feel justified in training persons in a highly specialized field in which jobs are problematical. I believe, however, that when trained teachers are available, the jobs will be forthcoming, as the need of special classes for the physically handicapped is well recognized by educators.

Trained Teachers Needed

The present practice has been to select a good grade teacher and put her in charge of the special class. The success of the projects to date has been considerably due to the careful selection of high-grade raw material. Such teachers are eager for professional instruction in the field, but the difficulty has been to find courses built precisely to meet their needs. In the case of lip-reading for the hard of hearing, too frequently it has been necessary to put such children in the hands of some deafened person, who has taken a course in lip-reading, for special instruction outside school hours and school control. It is one thing to be able to read lips and quite another to teach lip-reading.

It seems obvious that if these special classes are to improve or even to survive, trained teachers and trained supervisors are essential. For present teachers in these classes, opportunity must be made for professional improvement, for learning the latest and best methods. For prospective teachers, it is absolutely necessary that they be sent into the field with a clear understanding of just what their objectives and methods are. They must, furthermore, be familiar with the organization and administration of such classes. The same holds true for supervisors. At present, there are supervisors of the classes for the mentally handicapped in most school systems. It seems logical that these supervisors might likewise be given control of the classes for the physically handicapped, provided they are willing to fit themselves for the work. Teacher training institutions giving supervisors' certificates may well require further training and then give certificates for supervisors of both types of special classes. A suitable title would be "supervisor of classes for the (mentally and physically) handicapped."

If special classes for the physically handicapped are to be part of most school systems, then it will be necessary, in addition to providing teacher training courses, to provide for research as well.

Must Study Psychology of Handicapped

Perhaps the greatest need in the whole field at the moment is for critical analysis on the basis of the specialized psychology of each handicap in all its phases, including educational psychology. Gates's studies of arithmetic and spelling abilities of the deaf brought out some striking facts, and more work of a similar nature is needed in the field of the semiblind, deafened and pretuberculous and posttuberculous. Any clinical psychiatrist is well aware of the problems arising from physical handicaps. Such case-knowledge should be used to advantage. If physically handicapped children are to be taught at all in classes with normal children, then the classroom teacher will have to have some knowledge of the psychology of the handicapped, and this makes it all the more imperative that the teacher of the class for the physically handicapped be well grounded in this psychology, that she may instruct the classroom teacher in how to handle the abnormal child during the contact lessons with other children.

Classroom programs need intensive study. What shall be the curricula? Those teacher training institutions having bureaus of curricular research have a wide opportunity in the field dealing with the handicapped.

On the physical side, many situations must be studied: admission and release standards, rest periods, types of exercise, food and home cooperation in carrying out the program before and after school hours.

It seems perfectly obvious that if supervisors and teachers of these classes are to be accepted and acceptable in public schools, they should be trained in teacher training institutions. There is added prestige in coming from an institution from which many of the teachers in the school system have received their education.

It is interesting to find that one of the strongest and wisest of these organizations, in which the medical groups and the educators have worked most closely, is now definitely advocating college trained teachers of lip-reading for public schools. There has been certain discussion about training such teachers in schools for the deaf. Perhaps the point is not essential; nevertheless, any teacher, however specialized, who practices her profession in the public schools must have a definite educational background. This is found necessary in the case of teachers of art, music and other highly specialized subjects. The principle should hold even more strongly for teachers of the physically handicapped.

Courses at Teachers College

Teachers College, Columbia University, has made available a special program for teachers and supervisors of classes for the physically handicapped. At present the courses are for supervisors and teachers of classes for the semiblind, hard of hearing and fresh-air groups. Research is also possible for those who desire it. This research may be in any angle of the special class situation. This is, at present, the strongest program of its kind available. The courses are given in cooperation with the National Society for the Prevention of Blindness, the National Tuberculosis Association and the New York League for the Hard of Hearing. Use is made of the facilities available within Teachers College itself.

In a general statement of this work, it is necessary to omit certain special phases peculiar to any one type of class. Some problems common to all these projects are educational, social, vocational, and physical, educational here being used, perhaps incorrectly, in the sense of the three R's. Broadly, educational would include any or all of these phases.

One thing is certain. In these days of education for everybody, the physically handicapped child is entitled to the best and most suitable education he can possibly get. To date, such children have been pretty much neglected by educators and far less so by the health groups. The time has come for the health worker and the educator to join hands to give these physically handicapped children not a privilege but what is merely just and right—in other words, what belongs to them educationally.

Eighteen Years of Stuttering

A Stutterer's Psychologic Study of His Own Case

By Wendell Johnson

THE number of persons, especially children, who have speech defects is indeed large and runs well into the millions. It is generally considered, in fact, that most children stutter at some period early in their lives as a result of the rapid early development of the verbal and thinking capacity, which often runs ahead of the development of the vocal mechanism. This type of stuttering is usually transitory, but offers nonetheless a significant problem to parents. I mention it in passing in order to drive home the truth that speech defects are among the ailments most common to humanity.

A defect in speech has a drastic effect on the development of the child possessing it. When you consider that speech is the capacity an individual has to reproduce his very soul in words and thus to render himself meaningful to others and when you consider that this capacity involves the entire organism, you can readily grasp the seriousness of a speech defect. A speech defect is probably one of the outstanding factors in the life of any person suffering from it.

A Humane Field of Science

Around the problems concerning defective speech one of the most humane fields of science has developed. The field of speech pathology is so complex and the term "speech defects" is so broad and inclusive that no brief discussion could ever deal with the matter as a unit. I shall, therefore, limit this article to stuttering, since it is one of the more serious and more common forms of defective speech (estimates based on the more reputable studies place the number of stutterers in this country at about 1,500,000).

I shall do this, moreover, because I have stuttered for eighteen years. During the greater part of that time I have sought constantly for relief from the predicament, and for the last three years I have been engaged in a thorough investigation of my own case and of stuttering generally. I may speak, then, from actual experience as a stutterer, as one who knows where the jacket really binds, but also I may speak with a degree of scientific certainty—if certainty is not, indeed, contrary to the spirit of science.

What I have to say with reference to stuttering applies in many fundamental ways to most forms of defective speech. It may not apply fully to any single case, even of stuttering, but it will be helpful to all. Stuttering, like any other speech abnormality, is an individual matter; it involves the entire organism and is consequently colored by the whole and unique nature of the individual.

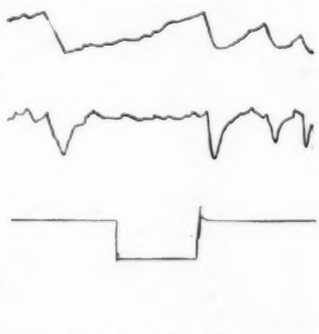
Bodily Tension and Fear

We may say that stuttering affects the child in two ways, physically and psychologically. When attempting to speak, the stutterer is in a state of bodily tension. If you close your fist tightly you can get a fair idea of what this tension is like. In the stutterer it is more apparent in the abdomen and shoulders, because of the disturbances in the contraction of the diaphragm and in the discharging of air from the lungs; the lungs are often in a state of prolonged inflation or deflation. The tension may be felt also in the region of the larynx, or voice box, and in the tongue and jaws. It becomes obviously manifest in the twitching of the facial muscles and a general fidgeting. This muscular tension is present not only during stuttering but also during periods when speech is not even being attempted.

For the stutterer is almost constantly in a state of fear. This fear consists in an anticipation of stuttering, a mental uneasiness, a dread, often a longing to escape and to vanish from the sight of others. It is a genuine state of feeling and is accompanied most often by a shrink-

ing manner of expression. The thoughts, the emotions—all of the mental activities—are haltingly expressed. The stutterer may anticipate stuttering even though the necessity for speaking be hours or perhaps days in advance. I have felt the fear of stuttering for many hours prior to making a telephone call, buying a railroad ticket or meeting a strange employer. I know it as a dread that is fatiguing and nerve-racking.

As a result of these constant effects of stuttering on the entire organism, the child soon becomes impressed with the fact that he is different from other children. He is usually embarrassed by this, for he considers his speech defect to be an inferiority. Public opinion does little to dissuade him from this attitude. He becomes despondent, perhaps, and he may bitterly rail against his fate. This is not difficult to understand when it is realized that his deeply fundamental impulses to self-expression and self-assertion are being abnormally restrained. Every student of psychology is familiar with the usual response to such restraint; it is rage in one form or another. Rage as a response to restraint is best seen in babies. When a stuttering child, then, shows an unpleasant nature, surely his parents or teachers should first look to his most apparent characteristic—his stuttering.



A record of breathing movements during stuttering. The top line is a record of the movements of the chest; the second line of the movements of the abdomen; the third line is a signal line indicating periods of difficulty, and the fourth line records time in seconds. In this record the abdominal exhaustion was sudden and complete, while the chest exhalation was gradual and relatively normal during the stuttering interval. The stutterer was having difficulty with the word instructor. This record presents one form of disharmony between the abdominal and chest movements in respiration during the act of stuttering.

But the stutterer may also react to his defect in other ways. By telling briefly my own experiences in this regard, I may illustrate what I mean. I developed a number of compensatory activities, which have enabled me to express myself rather well and to gain a satisfactory place in society in spite of my speech difficulty.

My most obvious compensation was writing. At an early age I developed a strong desire to write and an ambition to become an author. Unable to express myself by word of mouth, I turned eagerly to writing and persisted in it. Probably any stutterer, especially if he has any degree of literary inclination, might receive gratification in that way.

Closely related to my literary ambitions were my compensatory activities in study and scholarship. If I could not talk as well as the other pupils, I could nonetheless maintain a satisfactory place for myself as a pupil. Written work, examinations, blackboard exercises and other forms of recitation in which I was not handicapped enabled me to do this. I was always excused from oral recitation; I see no good reason why any stutterer should be required to recite orally. The good he may derive from talking before a classroom group is doubtful, and the harm may be great; certainly his recitation would do less than justice to his real ability. At all events, the experience is so nerve-racking as to be a downright risk.

In play and games I found a great compensation. My stumbling tongue did not bother me on the playground! I made touchdowns, hit home runs, scored baskets and found life enjoyable as a result. In the tense moment of a game, what did I or my friends care that I was a stutterer! I was rather an athletic star and that was the more pleasant thing to be.

Games of solitaire were also sources of compensation. I liked to be alone, being a stutterer, and I took pleasure in devising games that I could play by myself. With tiddledywinks I played solitaire baseball, basketball and football (and I might have played golf!). I played basketball by tossing fruit jar rubbers at pegs in the wall. Any robust stutterer, I think, would enjoy with special keenness a real basketball and a basketball goal, placed on the side of the garage perhaps in the back yard. There he could play by the hour—and forget his awkward tongue.

I had two other forms of compensatory activity which were less apparent and which the reader may find less easy to understand. One of these was a deliberately cultivated sense of humor. I was forever making jokes and clowning. This was of value in three ways: it made me a jolly good fellow (and life had never taught me that it was wise to make enemies); it made talking easier because it tended to relax my tense body (when blocked on a word, I would frequently feign laughter and in that way relax and try the word again); and it was after all better to laugh than to frown and weep. Not to have been a good fellow would only have added to the burden I already had; it would have made me, besides a stutterer, a social misfit.

The other compensation lay in my daydreaming in my Utopia. My Utopia was in contrast to the world about me; in it I did not stutter, I was not lonely, I was a great writer and scholar and athlete—and I was in love. Dissatisfied with the world about me and my handicap in facing it, I literally dreamed myself into contentment. If your stuttering child daydreams too much, he is only trying to live his life as best he can.

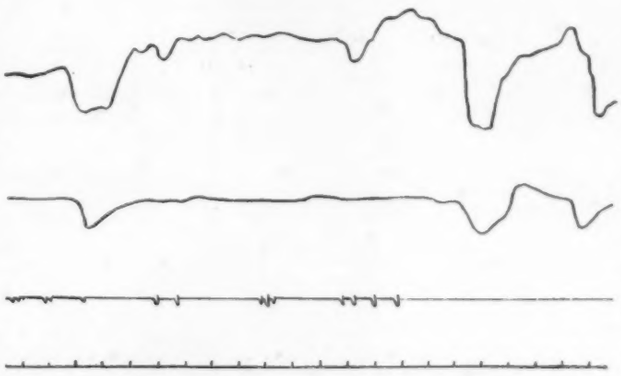
A stutterer, in my opinion, should be encouraged to develop any compensation to which he is inclined or which is possible to him, so long as it is a profitable activity and not harmful to him. There is no logic in allowing his speech handicap to deprive him of whatever happiness he might gain by these activities.

Stutterers have probably been injured severely by school teachers who are unenlightened regarding the nature and deep significance of speech defects. Any school teacher who has a stutterer in her charge should acquaint herself with that stutterer's special problems and with at least the elementary principles of speech pathology. If she does not do this, she may unwittingly mutilate a life beyond repair. I think I can make a few simple statements that will prove helpful to such teachers, as well as to parents of children who stutter.

No studies have fairly shown that stutterers, as a class, are less intelligent than other children.

Never allow the child to be unduly aware of the fact that his stuttering makes him inferior in any way to other boys and girls.

Never make fun of the stutterer. Never scold him for stuttering. Kindness is one of the cardinal principles of mental hygiene as it applies to stuttering children. They should not have pity but only commonsense kindness.



The lines are to be interpreted in the same way as in the preceding illustration. This record shows that the stutterer inhaled and immediately completely exhaled, and then for twelve seconds attempted, without success, to speak on empty lungs.

Never force a left-handed child to become right-handed. If this is done, the entire neurologic arrangement, especially as it is related to the function of speech, may be disrupted. The speech mechanism lies in the midline of the body, and its nervous control from the cortex in the brain is greatly affected by any tampering with native handedness. The most common type of stuttering is that resulting from the unwise shifting of natively left-handed children to right-handedness.

Never prescribe a treatment for the cure of stuttering. Stuttering is a defect of such intricate complexity in the neurology and psychology of the individual that treatment is unwise, and may be dangerous, without expert diagnosis. Only a reputable speech pathologist (who may be hard to find) should be relied on in this matter. The stutterer and his parents must not expect to find miracles. It may be necessary to go hundreds or thousands of miles, and to spend months, in order to obtain a cure—or even relief.

Many stutterers have been cured. But even the best clinics are not always successful. Beware of any one who claims to be successful in every case. Stuttering is not simple; it is far more than a speech defect. One should search for a cure and expend every effort to obtain it; but while the stuttering persists, it should be faced not despondently but courageously. And it should be faced with as much understanding as possible. The stutterer wants not only to be understood, but he also wants to be aided in his attempt to understand himself.

There is no royal road to understanding. Only diligent study can bring the joy of it. But diligent study of the physiology, anatomy, neurology and psychology of stuttering is not beyond the ability of most parents and most stutterers. At least, they can learn the elementary facts, as they are expressed by the most advanced students in the field. To outline that study, of course, would require the space of another article. I can only say here that the most prominent speech pathologist whom you know should be consulted or written to concerning the matter. At all events, have no faith whatever in short cuts and magic.

In three short years of careful, though not exhaustive, study I have shorn my own stuttering of its odious mystery. I understand it to the extent that I am no longer much afraid of stuttering as a fact of my life, and in that my happiness lies. For always it was the mystery, the perplexing impenetrability of the thing that made me miserable; it was this much more than the stuttering itself. I can say with the weight of a human document that a person with a speech defect can be happy and enjoy his rightful human heritage. But he can do this only through an understanding of his own predicament and that understanding lies within his reach—through careful study on his own part and on the part of his parents and teachers.

The science of speech pathology is progressing significantly. But meanwhile speech defectives exist in our midst, and it is my deep hope that they will be better understood as time goes on and that their suffering will be reduced to the extent that human sympathy and intelligence can reduce it. The speech defective does not want pity any more than he wants social neglect and ostracism. He wants only the opportunity to make his defect less of an agony and to live his life as best he can.

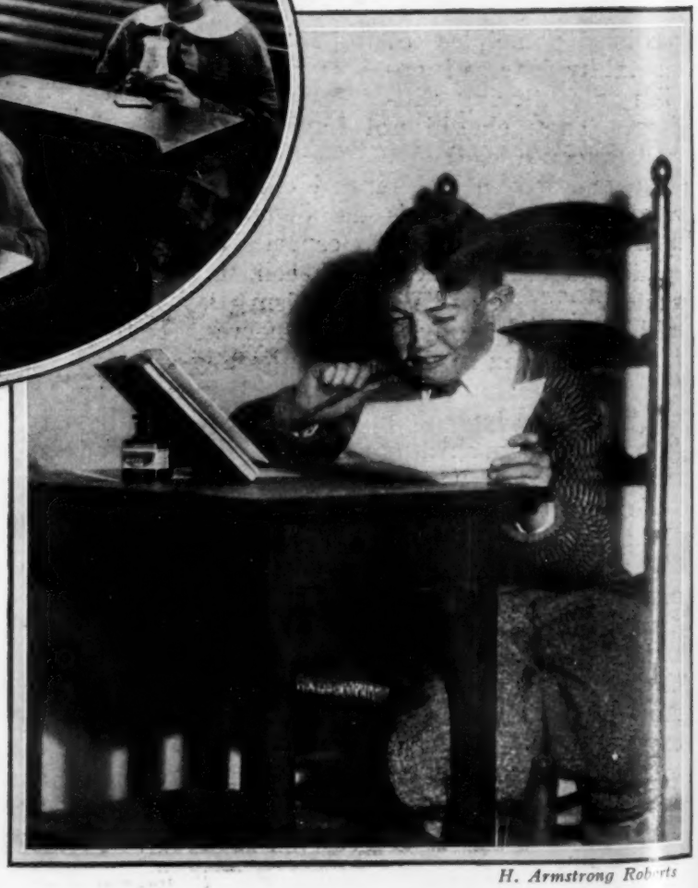
September Scholars

Even baby now goes to a nursery school.

H. Armstrong Roberts

Ewing Galloway

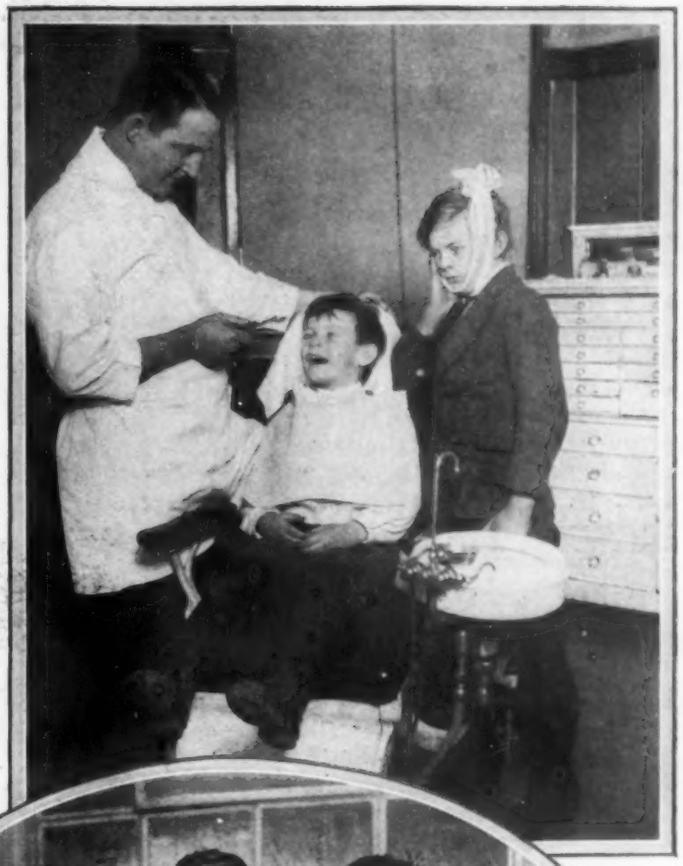
A pleasant school custom is milk drinking.



Home work comes hard when there's a game in progress outside.

H. Armstrong Roberts

School Bells Call the Children from a Summer of Play



Aching jaws can usually be prevented at the school dental clinic.

Wide World

Wide World

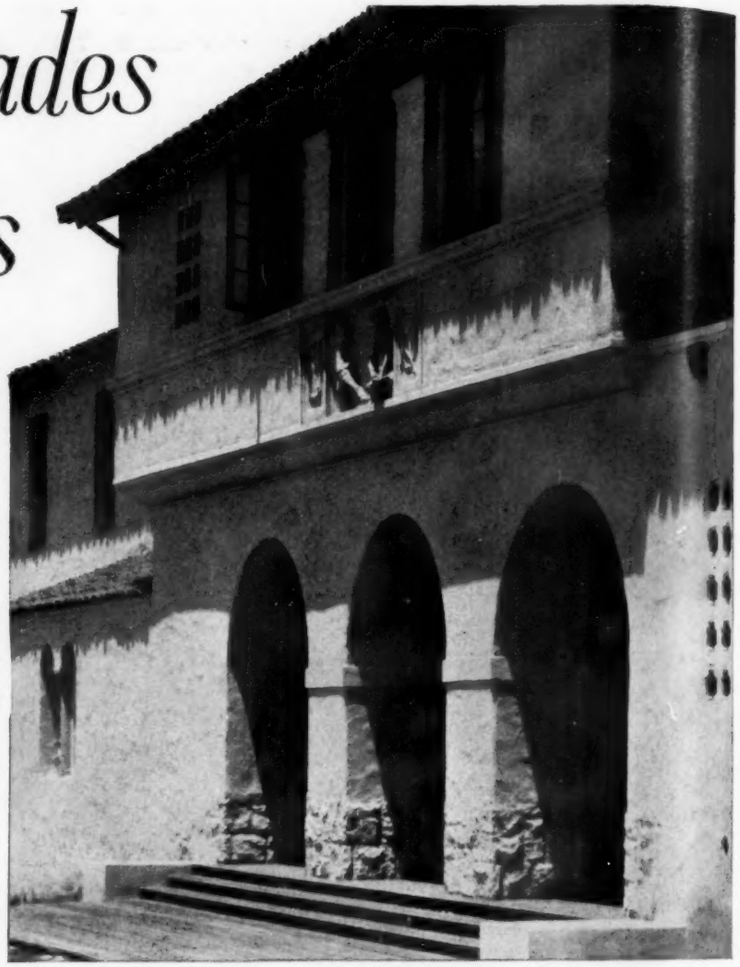
The health club draws up rules of conduct.

H. Armstrong Roberts

The teacher should set an example in fitness.

Health, Grades and Taxes

By
Edward L. Markthaler
and
George W. Hunter



Entrance to the new administration building of the Santa Barbara (Calif.) Teachers' College.

WE WERE sitting in the court of El Paseo, finishing our after-lunch cigarets, and talking shop, as was inevitable. It seemed strange that we were there in that picturesque California town; both easterners born and bred, products of rival New England colleges, one a physician, the other a biologist and yet both vitally interested in the same problem—health conservation of young people. I had come to Santa Barbara to talk over plans with the college physician and had found in him a crony as well as a co-worker.

Here we were frankly talking shop—on the values of a health service program in an educational institution. I had just been telling of some of the results of a health survey of the small colleges of California, made possible by the California Tuberculosis Association.

"Just to prove that a constructive follow-up program combined with campus health service pays, look at the statistics from Mills College given me by Dr. Bancroft," said I. "In a period of three years, from 1924 to 1927, she reports a decrease of days lost on account of illness of from 2,763 in 1924-1925 to 580 in 1926-1927. During this period the number of clinic treatments and visits to the dispensary increased considerably, while the number of days lost by illness decreased to a little more than one fifth of the original number.

"This shows not only the value of early diagnosis and treatment in diseases of young people of college age but also the value of the habit of going to reliable sources for medical advice and treatment. Work like that pays. If the dispensary is centrally located on the campus, then the students get the habit of dropping in in time to ward off trivial ailments that soon become bigger ones.

"And yet college administrators do not seem to realize the values of this work. Look how few small colleges in California actually have a program that is well worked out. Only six of the privately owned colleges, two of the teachers' colleges and two of the junior colleges have developed at all complete types of health service out of eighteen private institutions, seven teachers' colleges and thirty-three junior colleges in the state."

"Nevertheless, old man, this movement is growing"; this from the doctor. "Since you made your first visit a little more than a year ago, look what a distinct advance we have made in our program in Santa Barbara Teachers' College—preliminary health examination, follow-up with the x-ray clinic, individual consultation and advisement of students, special nutritional and posture follow-up, and what is most encouraging, better student understanding and cooperation."

I rejoined, "It does pay. The public is beginning to realize that the teaching profession needs members not only mentally equipped but physically fit as well. Look at the conditions found by Dr. Wood. In 1916 more than 40 per cent of New York state teachers were physically handicapped for teaching; we can surely better that record today. But the more recent Cleveland survey estimates a yearly loss of $300,000 to the city through the 9,000 days of absence of 4,000 teachers; much of that time could have been prevented by more rigid health examination and follow-up."

Finds Twelve per Cent of Teachers Unfit

"Then there is Louis Dublin's report," interrupted the doctor. "In his study of the absences of New York City teachers, he came to the conclusion that nearly 12 per cent of those teachers should be in some other occupation because of neurasthenia or other conditions of physical unfitness. It takes the taxpayers a while to wake up, but, believe me, when they once discover the value of health education in our schools and colleges there is going to be a change of heart in some of our school and college administrators."

"It is interesting, however," I returned, "to see how health work is advancing. I remember more than twenty-five years ago a crude experiment we tried out in the DeWitt Clinton High School, while I was there as head of the department of biology. It was before the days of extensive use of the I. Q., but we nevertheless segregated our freshmen into three groups on a basis of school grades. We had one series of classes that we called our 'boneheads,' segregated boys who had flunked every subject or all but one in their first semester of work in the school. We had in the department of biology three teachers who were M.D.'s, and they went over the boys in these classes to see what their physical condition was. We found what we would know today but what was a surprise to us then, that virtually every boy had some physical handicap of eyes, ears, nose or throat. That was my first eye opener on health examinations, follow-up work and the relationship of health handicaps to school grades."

"Well, professor, I can go you one better," remarked the doctor. "I have some unpublished results of health examination work I did in Elizabeth, N. J., in 1925 that shows conclusively the cost of illness to the taxpayers and the relationship of health to school marks. My statistics were gathered from a group of about 13,000 children, enough to make figures worth something. We graded our children into four groups as follows:

"Group I had no health defects; they might be said to be from 90 to 100 per cent perfect physically.

"Group II had minor defects not requiring immediate attention. They were from 80 to 90 per cent perfect.

"Group III had defects requiring attention, their general condition being impaired by such defects. I rated them as from 70 to 80 per cent perfect.

"Group IV had physical defects requiring immediate attention. Their condition was such that continuation in school was not advised. They were below 70 per cent in a health grading.

"I subdivided these groups into nose and throat, cardiac, teeth, nutritional, eye, ear, lung and postural defects, continuing my grouping into the four classes under each heading. For example, under nutritional cases I put in class I all who were of normal weight; in class II those who were from 1 to 7 per cent below weight; in class III the 7 to 15 per cent below weight and in class IV those more than 15 per cent underweight. Nose and throat cases were rated as follows: class I, perfect condition; class II, slight hypertrophied tonsils or nasal obstruction; class III, moderate difficulty, while class IV had the chronic tonsillitis cases and those with marked nasal obstruction. While these results were varied for the different defects, it gave a general basis of comparison."

"How did they group under such a classification?" I asked.

"We examined 12,913 children in all; of these, 8,171 went in group I, 4,273 to group II, 441 to group III and only 28 to group IV. The total showing some defect was 36.7 per cent."

Mental Achievement Related to Health

"But how did you get a comparison with the mental achievements of the youngsters?" I asked.

"Well, that wasn't so easy to get, but by checking on school records and the achievement tests made during the school year we found the following results," and the doctor took a card from his pocket. "Look at this comparison table. It shows that with a decrease in the physical condition of the children there was a corresponding decrease in scholarship and achievement."

Total	Physical Class	Scholarship Index	Achievement Index
8,171	I	2.38	2.45
4,273	II	2.62	2.78
441	III	3.36	3.34
28	IV	3.48	4.07

"Doctor, I take off my hat to you. What could be more conclusive? Those figures speak volumes," said I.

"But I have other figures that are even more interesting," continued the doctor; "the sickness among children who were necessarily excluded from school or who were unable to go amounted to approximately 12,739 days, which cost the

city of Elizabeth $7,643.40 for the year. But the contagious group, which came largely from those having defects of nose and throat or the underweights lost 17,718 days and cost the city $10,690.80, based on current teaching costs."

"How about the medical care of the latter group, doctor? Would those in this group be in a position to have a corrective check made? Did you get any information along this line? I ask the question as a sociologist."

"A good question, professor. We found that although about 25 per cent of all students showing physical defects received attention from the family physician, there were 48 per cent of medical cases that did not receive treatment. Moreover, there were nearly 59 per cent of the dental cases, all potential foci for disease, that were not treated. All of these meant loss to the taxpayer in days out of school and a loss in mental advancement to the community through the absence of the potential citizen. The worst part of this picture is the fact that with variation this condition probably exists in almost every community in the country."

"And what is the moral, my friend? You physicians can't do your job alone, we educators must get on the firing line and help. And until our institutions of learning wake up to the fact that they are responsible in a democracy for the health as well as scholastic attainment of its future citizens, our schools and colleges will continue to evade their greatest responsibility, that of cultivating a sound mind in a sound body."

Stefansson Ends Another Year on Meat Diet

VILHJALMUR STEFANSSON, arctic explorer, lived for seven years among the Eskimos on an exclusive meat diet. This story, cited innumerable times in recent years, provoked incredulous students of diet to many queries. Some critics believed that the arctic cold accounted for the unusual tolerance to fat and protein. Others declared it was due to vigorous exercise in the open air.

As a matter of fact it was not cold all the time in the arctic region. Summer heat comparable to that of the temperate zone prevailed for a part of each year and moreover practically a tropical temperature exists in the houses and under the fur clothing of arctic residents. Neither did the exercise explanation hold, for the meat diet worked just as well during months of sedentary existence.

To answer these questions and to furnish scientific data in a field of knowledge confused by conflicting theories and inadequate research, Stefansson and a companion of the Arctic, Andersen by name, consented to go on an exclusive meat diet for a year while living in New York under average conditions. Observing them was a group of physicians of the Russell Sage Institute of Pathology at Bellevue Hospital. One of these, Dr. Clarence W. Lieb, reports the experiment in *The Journal* of the American Medical Association.

Stefansson spent two months at the hospital. During that time intensive laboratory studies were made involving every conceivable reaction that the diet might cause. After that time he went about his affairs as usual, but reported to the hospital regularly for frequent tests. Andersen spent three weeks in the hospital at the beginning of the experiment and three weeks at the end of the year.

Both men appeared ruddier at the end of the experiment than at the beginning, Dr. Lieb reports. Although both men led a sedentary life during the year, their physical and mental vigor suffered no decrease. There was no variation from the normal with respect to pulse, temperature and sleep.

Stefansson lost about 5 pounds in weight during his year on the exclusive meat diet and Andersen about 6 pounds. Andersen declared that he endured the summer heat better, if anything, than in former years. He also made the surprising observation that his hair stopped falling out shortly after he began eating meat as an exclusive diet.

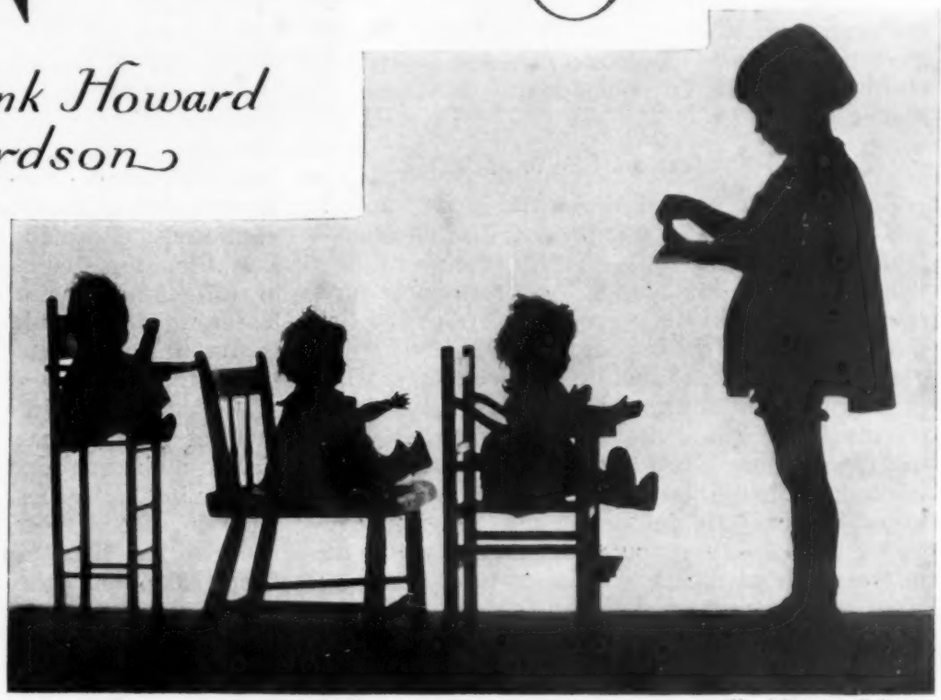
A dentist watched the teeth of the explorers carefully throughout the experiment. Neither of them had pyorrhea at all, but there was a considerable increase in the amount of tartar on Stefansson's teeth.

Monotonous as a continuous diet of any article of food would seem, the sameness of meat three or four times a day apparently did not pall on the palates of these veteran meat-eaters. Stefansson sometimes ate eggs when on trips, but Andersen ate nothing but meat. An important point was the proper balance of fat and lean. Stefansson became ill at the beginning of the experiment when he was given only lean meat for two days. By eating fat in tasteful quantities he fully recovered in two days.

Both men were psychologically fit for the experiment, having no doubts as to its outcome.

The Nursery School

By Frank Howard Richardson



H. Armstrong Roberts

Instead of playing school with her dolls in her own nursery, the child of from 2 to 5 nowadays may go to a real school outside her home.

A SIGNIFICANT development of the greatest interest to those who are concerned with the runabout child has been taking place in the past few years. This is the nursery school movement, which promises to become one of the most important advances of the twentieth century in the educational system.

While the name is borrowed from our cousins across the water, we have altered its application slightly, for in England the nursery school ministers to somewhat older children as well, while here the term is used to apply only to the child who was formerly designated as the preschool child. As this new type of school reaches down into these earlier age levels, the word "preschool" becomes a misnomer.

Why the Nursery School?

Why should the child of tender years (for the newest of the nursery schools are now taking children as young as 18 months) be torn from the home and placed in school at the time when he needs mother love and devoted mother care the most? That is the question so often asked; and worded in this way, it does make this new educational development look extreme and of doubtful value. But if we look through this smoke screen of words and study facts as they present themselves, we shall see that there is a far better case to be made out for the nursery school than is evident at first sight. In fact, the history of the movement will show a distinct need for it.

This need was evident first at the two extremes of the social scale. The first nursery school was not a nursery school at all, as educators use the term. It was a day nursery, to which working women who had to support their families by their day's work could take their children who were too young to go to school and leave them while they were at work. They brought them to the day nursery in the morning on their way to their work and picked them up at the end of the day, as they returned home. As mere physical care of the children ("parking" them, in the vernacular of today) was all that was aimed at, caretakers and nurses, rather than educators, were in charge; and the idea of taking advantage of the unequaled opportunity to influence children at the most plastic and psychologically important period in their whole lives did not occur to those who were directing the movement.

Inspired by Montessori

It remained for that revolutionary educator (who, it should be remembered, started her career as a physician and became an educator only after years of study as a physician), Madame Montessori, to realize that these hours of caretaking could profitably be employed teaching the little folk the rudiments of the fine art of living. The first Casa dei Bambini (house of the little children, to translate it

literally) was a place set aside in a huge new tenement house in Rome, in order that those of the tenants who were working women might get day nursery service for their children. The significant thing about this epoch-making development was that Dr. Montessori applied her newly devised system of education to the children who were left there; and in so doing gave to the world her conception of how little children should be started on the road to learning.

For the Professional Woman's Child

At the other end of the social scale came a call for similar relief for the working mother—from the professional woman with children who, either from choice or from necessity, spends her day in the office, the store or the studio, and who is willing and able to pay for the care of these children while she is earning a living for them and for herself. Such women would obviously be somewhat more concerned with the type of care given their children than would their less fortunately situated sisters and this more critical clientele hastened the improvement in the educational development of the nursery school that has come of late years.

Still another factor that has furthered this newcomer in the educational ranks is the increasing complexity of life in general, and especially of life in the congested urban centers, and the accompanying decrease in the provision made for normal healthy physical and mental development in the children who are compelled to live in them. Cities have grown large, with no appreciable increase in playground space; and even the dubious relief afforded the growing child by park systems has been quite unavailable to the vast majority of city children, from reasons of distance, lack of oversight or sheer official stupidity.

Granted the need for the new type of school for these practical reasons, how about the effect of schooling on the child himself? Is it possible at these early age levels to teach a child anything of value? Is he not too young to be subjected to formal instruction?

It is only now coming to be realized fully that the younger a child is the more profoundly affected he is by the influences to which he is subjected and the deeper is the impression made upon him by anything that happens to him. It is also coming to be recognized that the training of the five senses is one of the most important forms of education that there is and is the basis of most of the rest of our learning. Sense training, therefore, is placed to the fore in the nursery school; and these children are found to be capable of the finest discriminations in color, form, tone and the other sense perceptions. Household tasks, care of their own persons, dressing and undressing, and various other directly useful or indirectly valuable skills are learned even at ages that would seem at first thought quite impossible. All these foundation stones are of priceless value to the child, both at the time and later in his educational development.

But this is not all. It has been found that children separated from their mothers and the constant all-pervading and sometimes crippling attention given by so many mothers develop an initiative and independence that is quite remarkable as compared with others more conventionally situated. This freeing from emotional leading strings does not mean a lessening of affection for the mother; it does mean a lessening of dependence on the mother for the things that a child should learn to do for himself.

It has been an interesting discovery made in one of the nursery schools where careful periodic observations of height and weight have been made, and these then compared with controls furnished from the ranks of children on the waiting list, that the skilled oversight of food, sleep and play habits and the extension of this oversight into the homes through counsel to parents, has resulted in a real balance in favor of the nursery school children.

Nursery School Movement Sound

There is then a real reason along every line—physical, mental, emotional, social and financial—for the existence and spread of the nursery school. At present, comparatively few of our younger children have the opportunity of availing themselves of the manifold advantages of the nursery school; in many centers they have not yet been started and in many places the expense of such schools is too great for the financial resources of most parents. These are, however, only some of the early difficulties attending a new movement. The movement is eminently sound and will eventually solve these and other problems and become a part of our educational system and our way of treating the problem presented by the runabout child.

While the time when the nursery school will become universal seems far in the future, it behooves those of us who are dealing with children of this age group to become familiar with the idea and all that it implies. In this way we may rightly judge its development, aid it and shape it, and be ready to avail ourselves of it for the children under our care when it becomes possible to secure for them the obvious benefits that accompany the early commencement of definite, well-thought-out educational advantages.

HYGEIA
THE HEALTH MAGAZINE
Published by the American Medical Association
535 North Dearborn Street, Chicago

Plain Facts about Health and Disease

THE EIGHTEEN DAY DIET

THE silly season for fat ladies is on again. One might have thought that the volumes and reams of paper expended in overcoming the last craze for slenderization would have worked a permanent cure and that femininity would no longer be tempted by strange combinations of lamb chops with pineapple, lettuce and hard boiled egg, milk and more milk, or other arrangements guaranteed to cause the avoirdupois to melt from the shanks like the glacier snows from the timber line of Mt. Hood in August.

The latest sensation in diet is christened the Hollywood diet. The name carries with it the fantasy and mystery that are inevitably associated with movieland. It brings to life the romance and the beauty that tantalize the imaginations of dozing dowagers in cinema emporiums. It is not strange that all Babbitry is indulging in grapefruit for breakfast and luncheon and explaining the formation of Melba toast around the dinner table at night.

One Chicago hostess gave a luncheon to eighteen ladies and called each of them on the telephone beforehand to find out with which day of the eighteen day diet she was punishing herself. A 400 pound butcher who worked the diets out of the column of a well known health writer ate the first nine days of the diet at a single sitting so as to be on the diet and still satisfy his appetite. A well known surgical clinic has found it necessary publicly to disclaim any connection with the origin of the new combination.

Although it is freely asserted that the list is the result of five years of cogitation on the part of leading French and American physicians, it can be taken for granted because of the emphasis on grapefruit and oranges that the Hollywood diet emanated from California, a state not at all reticent in advancing new and unusual uses for these glorious fruits. Any good American dietitian could evolve a similar diet in a quiet morning and reserve the afternoon for golf and swimming.

The eighteen day diet consists, in brief, of foods selected for their vitamin content and low caloric value. Thus the first day includes one half grapefruit and coffee for breakfast; one half grapefruit, one egg, six slices of cucumber, one slice of Melba toast and tea or coffee for luncheon; and two eggs, one tomato, one half head lettuce, one half grapefruit and coffee for dinner. The diet provides from 500 to 800 calories per day, some days almost approximating a thousand. Occasionally a chop, a piece of fish or steak is added for variety. Most persons eat around 3,000 calories per day. On such a diet one is bound to lose weight, and lose it too rapidly. The best authorities insist that any loss of weight exceeding 2 pounds per week is not healthful for the average person.

The right way to lose weight successfully is to take a diet which does not provide more than 1,400 calories per day and which contains the proper foods to supply proteins, carbohydrates, fats, mineral salts and all the vitamins. That's all there is to dieting. But that simple statement does not appeal to the average mind. For years human beings have sought magical methods to accomplish marvels in the care of their bodies. People want some single substance or idea on which to pin their faith, hopes and aspirations. In the case of the Hollywood diet that thing seems to be grapefruit. Really there is nothing magical about a grapefruit. It is a fine addition to any diet. It contains vitamins B and C in considerable amounts, has one part of protein to five of carbohydrate, has some salt, has an alkaline reaction in the body, pro-

vides from 50 to 100 calories, and runs a little better in iron than do oranges. But the same virtues can be found in other fruits and in vegetables and a person ought to eat a balanced diet to get sufficient of all the necessities including bulk and roughage.

Some day human beings in general are going to know more about the foods they eat from the point of view of their dietary qualities. At that time it will be possible for each of us to regulate his diet to suit his individual needs. The best weight for every man is the weight at which he feels best and is sick least.

POISON GASES AS REFRIGERANTS

FEW of the improvements in modern methods of living have brought more comfort into life than electric refrigeration. No longer need the housewife worry about the tracks made by the iceman's feet on the kitchen floor. No longer need she fret at the iceman's delay while the baby's milk slowly sours on a summer afternoon. When father wants to shake up something cooling the cubes are ready. It is not surprising that household refrigerators have become almost as prevalent as a certain small model automobile.

In the past few months the electric refrigeration industry has had a reversal as a result of the natural fears aroused by the reports of deaths in Chicago and in other places from gases used as refrigerants. In the most widely used models the refrigerants employed are sulphur dioxide, methyl chloride, ammonia and brine. Sulphur dioxide and ammonia are odorous gases which are extremely irritating to the eyes and the tissues of the nose and throat. When they escape their presence is known at once, and the human being in the vicinity departs as rapidly as possible. Methyl chloride has been believed for years to be a harmless gas, relatively speaking. It has practically no odor. It is heavier than air and sinks to the floor when it escapes so that an open window does not insure safety. As a result of the casualties that have occurred, it is now known that methyl chloride is highly toxic, that in sufficient dosage it produces death and that in small dosages over a fairly long period of time it can produce severe mental disturbances including loss of memory and even violent derangements.

The health commissioner of Chicago and his consulting toxicologists point out that there have been almost thirty known cases of methyl chloride intoxication in Chicago during the past year with ten deaths definitely recognized as due to the gas. Ordinances are being drawn for the protection of the public and these will become no doubt models for similar ordinances in other communities. The American Medical Association has appointed a committee to make a complete survey of the hazards of toxic gases in modern life. The Secretary of Commerce has called a conference to look into the subject.

The heads of the refrigeration industry have themselves undertaken experiments to find some substances that may be mixed with methyl chloride to make it possible for human beings to detect its presence when it escapes. At present the nearest possibility seems to be the addition of a certain percentage of sulphur dioxide to the methyl chloride, but the entire matter is still in an experimental stage. Indeed, scientists need to know far more about the effects of small doses of methyl chloride over a long period of time before they will be able to estimate the extent of the hazards associated with its use.

THE PROLONGATION OF LIFE

THROUGH the ages mankind has searched for the mysterious secret of enduring life. He has craved some elixir that would aid him to live beyond the allotted span and give him years eternal. The quest goes on but the reward is not in sight. The transplanters of glands, the injecters of extracts, the promoters of radium and x-ray for rejuvenation provide work of scientific interest. They have not demonstrated, however, that one moment of additional life, liberty or the pursuit of happiness can be guaranteed to any human being who has submitted to their technics. When the cells of the human body disintegrate and die there is no magic potion that can raise them from the dead.

In the last one hundred years the life expectancy of human beings in the United States has been raised from an average of 33 years to approximately 58 years. The child born in the United States today can reasonably expect to reach 58 years of age, provided that he is in every way a normal infant. One hundred years ago the man who reached 50 years of age could reasonably expect to survive 21.2 years longer. Today the man who reaches 50 years, according to statistics provided by the statistician of one of the largest insurance companies, can reasonably expect to live 21.5 years longer. However, it should be pointed out that other statisticians and other figures indicate that life expectancy after middle age is actually decreasing instead of increasing at the present time.

In a recent communication to *Science*, Prof. C. H. Forsyth of Dartmouth College claims that conditions in this country at advanced ages have been on the down grade and that they have reached such a pass that all the great gains at the early ages are already more than offset by the losses at advanced ages. It has been generally recognized that the gain has been accomplished by overcoming the terrific infant mortality rate that long prevailed in our country and by the conquest of the acute infectious diseases. Professor Forsyth points out that the expectation of life at 10 years of age increased greatly during the thirty years from 1890 to 1920 and that therefore the average length of life increased also. However, when one studies the figures for the various years of life for the years 1921 to 1927 one finds a new story. The expectation from age 45 or 50 on is now the lowest of which we have any record. Moreover, in support of the claims of Forsyth are the figures just made available by the health director of the state of Illinois. He finds that mortality rates among people past 40 have increased about 10 per cent in the last ten years. The percentage of all deaths in Illinois, occurring among people between 45 and 65 years, has increased from about 20 per cent in 1918 and 22.5 per cent in 1920 to 27 per cent in 1927. Stated succinctly, the person at 40 years of age today in Illinois may look forward to only about twenty-nine years of additional life, compared with an expectation of about thirty years a decade ago.

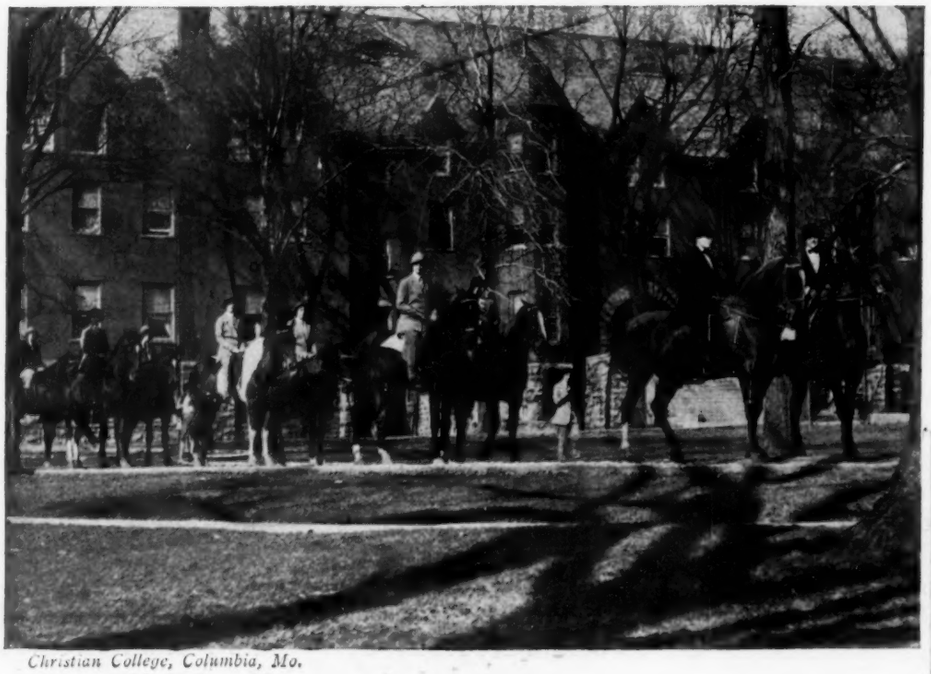
Various suggestions are offered in explanation of the decrease in life expectancy after middle age at the present time. The director for Illinois feels that errors in personal hygiene and in diet are largely responsible. The degenerative diseases loom large in the list of the causes of death. Cancer, nephritis and diabetes are prominent after heart disease as the chief causes of mortality. These diseases are controllable to some extent if discovered in their earliest stages.

Professor Forsyth feels that the figures are a reflection of the changing conditions of life. There is a great drift of the population to the cities. Life has become too fast and too strenuous. New hazards arise and methods of protection follow after. Forsyth insists that little will be accomplished until the American adult himself is duly informed and made to realize that he is in the midst of a decidedly losing fight and that the situation will continue until he applies himself energetically to be superior to his environment. "Each adult must fight his own individual battle," says Forsyth, "since he usually brooks no interference with his own individual mode of living. Medical authorities and scientists can be depended upon to care for the children and their diseases, but they have little or no chance to interfere with the lives of adults."

The diseases that continue to devastate mankind are the degenerative diseases of middle age. These conditions can be detected by a proper physical and laboratory examination in their early stages. They can be partially controlled by proper measures of hygiene, diet, rest, exercise and similar measures if seen early. When they have proceeded to the point of tissue degeneration and destruction, their progress is arrested only with the greatest difficulty. Indeed, an eminent statistician has asserted that if we were to apply all that we now know about the control of these conditions, life expectancy would be further advanced by from five to seven years only, and that anything beyond that is merely a figment of scientific imagination and the expression of a wish rather than of an accomplishment.

Professor Forsyth is not at all optimistic about the possibilities for the future. "It truly looks as if it is going to be a losing fight for some time to come," he says, "for although some adults are making a commendable effort to live sane lives the vast majority seem very indifferent and many give apparently no thought whatever to habits which they clearly know are bad and which they know they could easily discard. There is surely no worse influence," he feels, "than that wielded by well meaning authorities who go around airing their ill-founded beliefs that all is going well, and that before long everybody is going to be living seventy-five to a hundred years!"

Prof. Raymond Pearl has shown that the kind of tissues we inherit from our parents is the most significant factor for long life. About all that we can do toward the prolongation of life is to avoid preventable disease by the usual sanitary and hygienic precautions. The sane man will have a physical examination at least once each year to detect the presence of the degenerative diseases, which come on insidiously. He will avoid worry and nerve strain since these seem to be of importance in using up the inherent vitality with which we are endowed at birth. Moderation in all things, a certain amount of mental and physical exercise, some time in the open air, and a reasonable amount of happiness—these constitute the prescription for a long life and a useful one.



Christian College, Columbia, Mo.

BEAUTY TREATMENT FOR MISSOURI COLLEGE GIRLS.

Underwood & Underwood

CIVIL WAR VETERAN

To the left, Mrs. Mary Winegardner, thought to be the last Civil War nurse living in Illinois and the last surviving charter member of the National Woman's Relief Corps founded in 1883. To the right, Mrs. Winegardner in 1861, in the uniform she wore while nursing wounded soldiers of both armies in a hospital at Memphis, Tenn., and on emergency calls to the battle front.

NINE DEAF CHILDREN RECEIVING DIPLOMAS from a Chicago public school.

Pacific & Atlantic

Pacific & Atlantic

IN MODERN JAPAN

De luxe watering troughs like this installed in the city of Tokio by the Japanese S. P. C. A. will probably disprove the old saw about leading a horse to water.

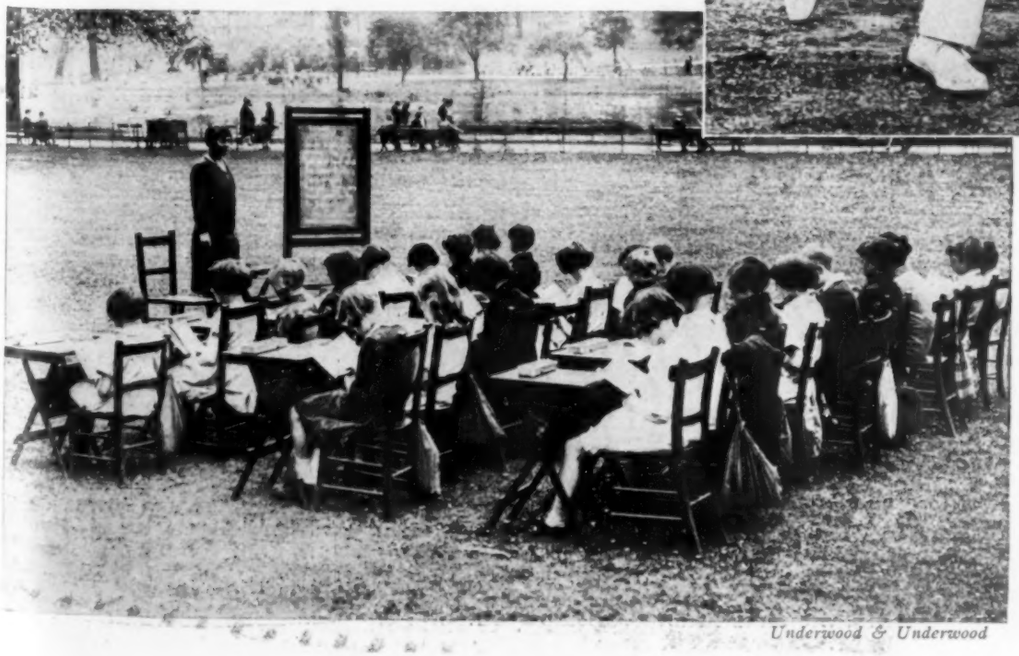
Underwood & Underwood

AN ADMIRAL AT CRICKET

Earl Jellicoe, famous sea fighter, plays with youthful abandon as captain of a cricket team entirely made up of admirals of the British fleet.

LESSONS IN THE PARK

An outdoor school in St. James Park in the heart of crowded London brings the benefits of air and sunlight along with lessons to this group of delicate youngsters.



Underwood & Underwood

The School Lunch Room

A Health Play in One Act

NOTE: The following play was written by the boys and girls of the fifth grade health class in the elementary school of the University of Chicago. The children wrote the play for an assembly exercise to be given during state health promotion week. The play was not only interesting to the children of the lower and upper grades, but it served as an excellent test of the fifth grade children's understanding of the health teaching.—AILSIE M. STEVENSON.

CAST OF CHARACTERS

Announcer
Undernourished boy
Six healthy school friends who tell about:
- Milk
- Vegetables
- Fruits
- Muscle-building foods
- Energy needs
- Other health needs

Lunch room manager
Checker
Cashier
Steam table assistants
Classmates in line

SCENE: *The stage is set to represent the school lunch room. Large tables, set with trays and real food or cardboard models, are at the rear to look like the steam tables and counters of a cafeteria. Behind the tables are tall boys and girls dressed in caps and aprons. At the side are two tables on which are typewriters bearing signs to indicate that they are the checking machine and the cash register. A bulletin board containing the day's menu hangs in a conspicuous place. To the front of the stage are two low kindergarten tables with matching chairs. These represent dining room tables, and do not hide the steam tables.*

ANNOUNCER *(stepping before the curtain):* This is Health Week and the children of the fifth grade health class are going to give a cafeteria assembly. It will help us if you will imagine you are in the school lunch room.

(The curtains are drawn aside and the lunch room manager steps to the door and opens it. The children enter and begin to file past the steam tables, selecting their lunches.)

UNDERWEIGHT BOY: Our teacher said this is Health Week. I am underweight and I wish I knew how to choose a lunch so I could get up to average weight.

SCHOOL FRIENDS: We'll help you. We've been studying about food in the health class and we know what you should do to gain weight.

(Five of his school friends put food on the underweight boy's tray—milk, scrambled eggs, creamed potatoes, spinach, bread and butter, and fruit gelatin topped with whipped cream.)

LUNCH ROOM MANAGER *(to one of the boys):* You can't eat that lunch. There is nothing substantial on your tray. Go back to the end of the line and I will help you.

(The children finish choosing their lunches and sit down at the low tables at the front of the stage.)

UNDERWEIGHT BOY *(rising and looking around):* Why did you put this milk on my tray?

FIRST SCHOOL FRIEND *(rising):* I put milk on your tray because if you want to gain you should drink lots of milk. *(Underweight Boy sits down.)* Milk makes you grow and builds strong bones and teeth. I brought my lunch from home *(holds up lunch box)* and I chose milk soup to go with it for I wanted milk and something warm. Scientists have proved the value of milk by experimenting with rats. One rat after a certain length of time was small and undernourished while the other rat was full grown and healthy. Both rats had potatoes, meat, vegetables and bread, which is a diet lots of people have, but the undersized rat had water to drink and the large rat had milk. The water rat had crooked and crumbly bones, but the milk rat had straight, strong bones. Milk made the difference. Another thing that shows us that milk is a good and nourishing food is that babies live on it for the first part of their lives. Boys and girls of our age should have a quart of milk every day, one cup at each meal and a cup in our food. *(Sits down.)*

Who put spinach on my tray?

UNDERWEIGHT BOY *(rising and holding up dish of spinach):* Who put spinach on my tray?

SECOND SCHOOL FRIEND: I did. The reason I put spinach on your tray is that spinach and green vegetables have iron in them. Iron makes our blood red. We need red blood because it carries food and oxygen to every part of the body. The way we usually think of iron is in the form of nails, locks or parts of an engine, but the iron that is in vegetables is soft. In our health class we had a red powder that was iron. We put some in water and it looked like blood. All vegetables are good for us, but the green ones are best because they have the most iron. We should have two vegetables in addition to potatoes every day.

UNDERWEIGHT BOY: Some one put fruit gelatin on my tray. I should like to know why it is a good thing to have in the diet.

THIRD FRIEND: Raw fruits and vegetables are important in the diet. They are called protective foods. They keep us from having a terrible disease called scurvy. Children of our ages should have at least one raw fruit or vegetable daily. A long time ago, after America was discovered, there was a French explorer called Jacques Cartier. After he and his sailors had been out on the ocean a long time his sailors began to die from scurvy. As soon as they reached land, the Indians gave them a drink made from pine needles, and this cured the sailors. The reason was that the pine needles were fresh and growing. Later, when doctors found out the importance of fresh, raw foods, British sailors were given lime juice when on a voyage. They were called "limies" and they are sometimes called by that name today. In the old days many babies and even grown people had scurvy, but now no one need have it. Mothers give babies orange juice and tomato juice to drink. That is why fresh, raw fruits are so very important!

UNDERWEIGHT BOY: Here are scrambled eggs on my tray.

FOURTH FRIEND: I put scrambled eggs on your tray because scrambled eggs are muscle-building food. If your muscles are not strong you cannot have good posture. You would be weak and not able to fight through life if you did not have building foods. Muscle-building foods also help you to gain in weight. Now I have been talking about what building foods do for you, but I have not told you what foods are building foods. They are meat, fish, eggs, cheese, dried beans and peanuts. Milk is also a muscle-building food, but in our health class we put milk in a class by itself because it does so many things for you. I put macaroni and cheese on my own tray. It is a good combination because the cheese is a muscle-building food and it does not cost so much.

UNDERWEIGHT BOY: I found creamed potatoes and bread and butter on my tray as well as the things you have told me about. Why should I eat potatoes and bread and butter?

FIFTH FRIEND: You found bread and butter and creamed potatoes with your lunch because I knew you needed energy foods. If you don't

have energy foods you won't have any pep. Some people eat the right kinds of food but not the right amount of food. You should eat the right kinds of food and the right amount. A calorie is the measure of the heat that is given off when food burns. A boy or girl 10 years old should have 2,600 calories a day. The number of calories that you need depends on your age and size and how much you exercise.

A boy who is underweight needs more calories than a boy of average weight. An average boy should have 800 calories for lunch. Let's see how many calories you had on your tray. *(Counts aloud as he lifts each dish.)*

Scrambled eggs	100 calories
Creamed potatoes	200 calories
Spinach and butter	50 calories
Bread and butter	200 calories
Fruit gelatin with whipped cream	200 calories
Milk	160 calories
	910

If you don't know how to choose a lunch and you want the right kinds and the right amount of food, choose the plate lunch. It has the right amount of food and the right kinds and it costs less than the lunch you had today.

SIXTH FRIEND: Of course, food is important, but other things are equally important. One of them is sleep. Sleep gives the body time to rest and repair itself. Sleep also gives time for the body to grow. To sleep well you should use light, warm covers and a low pillow, and you should have a window open at the bottom and the top. You should help your body to keep strong and well by sleeping from ten to twelve hours every night. Another way to keep strong and well is to get plenty of sunshine. Sunshine helps to make strong bones. I once knew a boy who had weak bones and the doctor said he needed sunshine. The back porch was glassed in and his mother thought the boy could stay on it, but the doctor told her that the important part of sunshine cannot get through ordinary glass and that one must go outdoors to get fresh air and sunshine.

Children who cannot get plenty of outdoor sunshine should take cod liver oil. But what's the use to talk about fresh air and sunshine? Let's pay our bills and go out in the sunshine to play.

(Children pay the cashier and file briskly out of the lunch room.)

THE FOOLISH FISH

I watch the goldfish in his bowl
  Upon the sunny window-sill.
Some think him beautiful but I
  Have always thought him such a pill.

He wiggles round his watery world
  Or mutely hangs in watery space.
He has no neck and hardly any
  Features on his foolish face.

He swims and swirls and swirls and swims
  And gapes and goggles day and night.
He soaks in water all the time
  Yet keeps his red complexion bright.

The goldfish in his crystal bowl
  Upon the sunny window-sill
May be quite lovely, but to me
  He simply seems a perfect pill!

—VERE DARGAN.

HEALTH *and the* SCHOOL

Edited by
J. Mace Andress, Ph.D.
67 Clyde Street, Newtonville, Mass.

Teach Health Healthfully

KATIE came home from school extremely puzzled.

"Why, Katie, what is the matter?" asked her mother.

"Teacher says that the world is full of germs. They are in our food, in the milk and water that we drink; they are on our hands, our faces, in our mouths and throats and noses. They are bad germs, too—germs of diphtheria, pneumonia and colds. When we cough and sneeze they fly around in the air. It's dangerous to be near people. When we cough or sneeze we need to hold a handkerchief before our faces. If we should drink from another girl's or boy's cup, we might get some of his germs and get sick and die. Mother, I don't want to go back to school. I hate hygiene."

The foregoing conversation reported to me contains much truth. Although it is undoubtedly in an exaggerated form, it reflects an unwholesome method of teaching hygiene.

Must Not Arouse Fear

Health teaching is one of the most difficult subjects in the entire school curriculum, largely because it may arouse fear. Much of the literature on the subject stresses the subject of disease and this immediately suggests to the child such disagreeable things as sickness, hospitals, operations, chloroform, deaths and funerals. It may even cause him to be afraid of his doctor.

Much has been discovered and written about the danger of inculcating fear in the minds of children. Children are likely to carry some of these undesirable attitudes through life. Often they develop emotional difficulties and conflicts that seriously interfere with their happiness and health. They may get such a deep dislike for the subject of health that they cannot endure the study of it. They may become so sensitive to the whole subject of germs that they forever live in the fear that they did not wash their hands or practice rigidly some hygienic law. Hypochondriacs may be made by such unhealthful and funereal health teaching as has been referred to in the case of Katie.

Our newer health movement has strenuously attempted to liberate itself from some of the disagreeable associations connected with physiology and disease. Even the good word "hygiene" has become somewhat unpopular. Textbooks and courses are now usually labeled "health." Much has been done to make the study of health attractive and wholesome. There are health pageants, games, stories, plays and operettas. Joy and inspiration have tended to become firmly associated with health teaching. This is highly commendable but often such teaching avoids the whole subject of disease or deals with it in a superficial fashion. This extreme may be more desirable than that of overemphasizing the subject of germs and disease, but such instruction is still handicapping the individual in his adjustment to the world in which he lives. There is such a thing as disease and we are better able to combat it if we know something about its cause and the means of prevention.

When and how, then, is the subject of disease to be studied by school pupils? There is a general opinion that almost nothing needs to be taught to primary children about disease. Especially in the primary grades, children should be trained in health habits. They may be taught to wash their hands before eating, to avoid "swapping" gum, to drink from individual cups or drinking fountains, to drink milk and to form other habits that will protect them against disease with little or nothing being said about illness and disease. The joy of healthful living should be stressed instead.

Good Germs as well as Bad

As the pupil gets older and is gradually introduced to science, particularly in the junior high school, he should know about germs in the same way that he should know certain facts about electricity. To prevent fear, pupils should understand that many of the germs are either harmless or helpful to man. They help him to make butter and cheese, to tan leather, to fertilize the soil, and aid man in numerous industrial processes. Although some of the germs found in the body of man are disease germs they have become adapted as parasites to the body and do no harm. Emphasis may be put on the way the body through its various agencies, such as the skin and antibodies, protects itself against disease. Finally, the study of health through the lives of its great heroes, such as Reed, Pasteur and Lister, should show how man is vanquishing disease. By such tactics children may be educated so as to overcome fear and face the problem of disease in a courageous and wholesome way.

It is no wonder that teachers who expose their children to such interesting health methods and projects as are presented in this section "Teaching Health" find the study of health one of the most popular subjects in school.

A BIRTHDAY PARTY! YOUR INVITATION

WITH this issue of HYGEIA, the department of "Health and the School" is one year old. It has been a happy year for the editor. He has enjoyed his relationship with the thousands of readers of HYGEIA. He has tried to write editorials of practical significance, to present some of the best examples of health teaching and to keep his readers abreast of the best literature on health education. Many words of encouragement and good cheer have come from teachers who have followed his columns. He would appreciate hearing from many more of you. Have you found this department helpful? In what ways has it best served your needs? What are your most pressing problems? How could this department better serve you within its limited space of four pages? Won't you drop the editor a letter now? If you don't do it now, probably you never will. Direct your letter to J. Mace Andress, 67 Clyde Street, Newtonville, Mass.

TEACHING HEALTH

(In this column will be published each month concrete examples of good health teaching. Teachers are invited to send in contributions not exceeding 600 words and preferably less to the editor of this department. Illustrations of the actual work of children will be welcomed. Contributions accepted will be paid for but no manuscripts will be returned.)

A HEALTH CIRCUS

The poem, "The Good Health Circus," by Marguerite Gode in the May, 1928, issue of HYGEIA, gave inspiration to our fifth and sixth grade health club for a project which proved worth while. This undertaking consisted of making a real "Good Health Circus" with a tent and characters representing all the habits that were deemed an intrinsic part of such a gathering.

First, the selection of the characters proved a good review of health principles, as performers were selected only according to merits as brought out by the club members. The characters finally decided upon were numerous. Some patterns were borrowed from the illustrations accompanying Miss Gode's poem; for example, the corn bareback rider on her milk bottle steed, the squash elephants, and Oscar Onion, who peddled milk. Original figures were added to these—tooth brush men, clowns, and animated vegetables and fruit. They were duplicated on the ditto machine so that each child had a page of color.

The clowns were valuable, as health slogans could be printed on the sandwich boards they carried. Old Grouch Coffee Pot was added as a plot for the circus story and was the essence of gloom as he sulked on the outskirts of the circus grounds. The children invented characters of their own, such as monkeys which never forgot to exercise, and vegetables and fruit upon which were bestowed weird arms, legs and faces. These were colored, pasted on cardboard, cut out, and fastened on small wooden blocks so that their posture could at no time be criticized. The tent, easily made of a folded strip of drawing paper and five triangles for the roof, was embellished with colored pennants and surmounted with a flag. The whole outfit was set upon a sand table and the scene enhanced by paper and green sponge trees. (An ordinary table covered with green dustbane and cornmeal paths serves as well.)

The show itself consisted of parades, races by the tooth brush sprinters, an exercise drill by the carrot squad, performances by the animals, speeches by the clowns, and familiar health songs played by the fruit and vegetable band.

The last part of the project brought forth the most originality on the part of the girls. Each one wrote a story of the circus, or, pretending that she was one of the characters, wrote an autobiography. The lives of some of the vegetables were fraught with hardships, while some aided world's champions in accomplishing their feats. The most entertaining were the narratives about poor, old Coffee Pot whose wrong doings led him into all sorts of difficulties and who, despite all his efforts, could never gain entrance to the circus tent. The clowns all led lives to be emulated.

If the carry over value—our greatest aim in health teaching, and yet so hard to measure—was at all proportionate to the children's interest in this undertaking we feel this was a signal success, for we still hear that:

"The Good Health Circus is coming to town
With loud beet drums and Easter egg clown."

WILHELMINA BRADLEY,
Greene, N. Y.

HEALTH HABITS THROUGH NATURE STUDY

Nature study offers so many interesting occasions to teach health habits and principles that we have outlined two lessons illustrating a few such opportunities.

And although outlines bear much the same relation to actual lessons that halftone prints bear to colored ones, imagination will bring out the color, even in outlines. So we ask you to season well with imagination before reading. Then you will see that these lessons are but starting points, and that "thoughts to be followed" merely indicate the direction of some of the educational journeys that may be made. Bon voyage!

HOW LEAVES MAKE FOOD

AIM:

Nature—to learn how plants make their food.

Health—(1) to emphasize the value of sunshine, water, fresh air; (2) to form a basis for further study of our foods.

MATERIALS:

Potted plant, or seedlings growing between glass and wet blotting paper so that roots as well as the rest of the plant may be seen; potato; colored chalk; iodine.

DEVELOPMENT:

What do plants eat?

Where does their food come from?

They make their food inside the leaves; your food has to be made before you eat it.

Leaves as kitchens (make blackboard diagram of plant showing ingredients brought to the kitchens).

Water—from roots up through stem to leaves. (If a cut stalk of celery is allowed to stand in a solution of red ink for a few hours, this work of the stem is nicely illustrated.)

Air—through the leaves.

What part of the air does the plant use for food-making?

What part of the air do you use?

"The Good Health Circus is coming to town.

Leaf-green—where is it?
Sunlight—the baker.
What does sunlight do for you?
What does sunlight do for you by helping plants?
Each ingredient depends on help of others—cooperation.
Kind of food made—sugar, which then turns to starch.
More food made than plants need for present growth—reserve strength.
Plant storehouses
Where are they?
Kind of food in many?
Test slice of raw potato with iodine for starch.
What does starch do for us?

THOUGHTS TO BE FOLLOWED:
How much do we depend on plants for food?
What plants that we eat have starch in them?
What other foods are there in plants?
How do these foods build up our bodies?

THE ROBIN

AIM:
Nature—(1) to stimulate observation; (2) to give a knowledge of the economic value of robins.
Health—(1) to encourage the eating of fruit; (2) to emphasize variety in diet.

MATERIALS:
Pictures of a robin and fruits, or, if possible, a field trip to see robins and fruit.

DEVELOPMENT (for the indoor class):
Who would like to tell us about a robin that lives near his home?
From these stories develop the lesson to include the following points.
Nest building:
Work of mother bird—carrying of mud.
Work of father bird—his song.
Use of feet.
Use of bill.
Coloring of mother and father bird.
Why does mother wear darker colors?
Young:
Eggs—shape and color.
Coloring.
Food—eats 1½ times its own weight in food each day.
How much do you eat?
Why does bird have to eat so much more in proportion?
Work of parents in collecting food.
Food of grown-up robins:
Variety—slightly over 50 per cent insects and earthworms; read Emily Dickinson's poem, "A bird came down the walk . . ." (Nature XXIII.)
Fruit—nearly 50 per cent of his diet; wild cherries and mulberries preferred to cultivated cherries.
Value of fruit in child's diet.
Value of variety in child's diet.
Outline pictures of robin and fruits for coloring.

THOUGHTS TO BE FOLLOWED:
How can we attract robins to our homes?
What can we learn about diet from robins?

HELLENE SEAMAN,
New York, N. Y.

"With loud beet drums and Easter egg clown."

HEALTH HABIT HINTS

MERELY exposing boys and girls to correct health habits does not seem to insure the adoption of those habits. Most health habits must be carried out in the home and the health teacher can really know only from the outward appearance just how well the lessons are practiced. On the other hand, there are a few important health habits that can be observed in the classroom. Nagging about those not kept only embitters the offender and practically no progress is made.

Fourteen classes meet in my classroom twice each week for lessons in health. Last year we arranged a contest that could be conducted in the classroom. Each time a class came to the hygiene room it was possible for that class to make five points for each of the following behavior achievements: if no one coughed without covering the mouth; if no one sneezed without covering the mouth; if pencils and other small objects were kept out of the mouth. Because there were health class periods twice each week the habits were kept in the minds of the pupils without any preaching. No mention of the contest was made during the class period, though often the class president reminded her classmates before the period opened of their opportunity to add fifteen points to their score that day. It took only a moment for the teacher to set down the different scores in her class book at the end of the period. One point was lost each time a pupil did not keep the rules, though that was not mentioned unless some pupil would regretfully tell going out that he had lost a point for his class.

At the end of the calendar month pennants were awarded to the four sections making the highest scores. These pennants were made of gay colored construction paper, a different color for each of the contests, with a suitable picture pasted thereon. At the end of the month these pennants were presented in our assembly to the winning sections. On the pennants were lettered the number of the winning section, and the students in that section were given the pennant to hang in their home room the next month or as long as they could make the highest score. If two or more sections had a tie in score, all winning section numbers were lettered on the pennant and the time for possession was divided.

This seems a simple way of teaching simple habits that all should observe but just do not. Nothing arouses interest like a contest. A keen pride goes with the honor of holding a pennant, be-

cause all classes that come to that home room for work see the trophy day after day and this, too, is a reminder. It gives me much joy to see how these lessons carry over until the next year with the pupils still in our building. There is a constant demand for another contest.

ANNA L. STEVENSON,
David Prince Junior High School,
Jacksonville, Ill.

NEW HEALTH BOOKS AND TEACHERS' MATERIALS

ONE of the most perplexing problems in health education is to get children to form the habit of eating particular foods. Mothers complain that Johnny will not drink milk and that Mary refuses to eat carrots and spinach. It is impossible to estimate the nervous strain endured by parents in attempting to cultivate in their children the right kind of appetites for food. Usually the more they have insisted the more difficult it has been to achieve success.

Dr. Gauger in her recent volume [1] has attempted to solve some of the problems involved in overcoming food dislikes. Twenty subjects were selected from the two nursery schools of the Institute of Child Welfare Research of Teachers College, Columbia University. The children varied in age from 18 months to 3 years and 4 months. Taste stimuli were given to the children and their reactions carefully watched. The results were submitted to the most critical statistical methods. Dr. Gauger found that responses to unpleasant stimuli can apparently be modified without the reward of pleasant ones in many children.

The following paragraph summarizes this study admirably: "It is doubtful if much is gained with children from 18 months to 4 years by emphasizing the importance of food. Adults often talk to a child during the meal, urging him to eat, and he is sometimes even forced to eat. The feeding situation should be kept as free from emotions as possible. An indifferent atmosphere, in which the child is not aware of how important it is for him to eat his dish of spinach, produces better results with many children. A child who wants to occupy the center of interest often feels that he becomes quite important when he fails to eat certain foods. This gives him satisfaction which is easy of attainment."

1. The Modifiability of Response to Taste Stimuli in the Preschool Child. By Marguerite Elston Gauger, Ph.D. Pp. 53. Price, $1.50. Bureau of Publications, Teachers College, Columbia University, New York, 1929.

EVERYBODY is interested in abnormal persons. As children we recall the old lady who hobbled around with a cane and talked to herself quite oblivious to our presence. In school there was the boy who stuttered and the girl who seemed so devoted to her books that she did not go out to play or if she did she was laughed at because of clumsiness and immediately withdrew to her books and dreams. Queer people, abnormal people, have always been profound mysteries to the layman. In the past those suffering from maladjustments have been cruelly treated, and even today they are misunderstood by the great mass of people.

Dr. Morgan in "The Psychology of Abnormal People" [2] gives us a sympathetic insight into the lives of those usually regarded as peculiar. It is not Dr. Morgan's purpose to leave us with a mere interest in the unfortunate. After all there is no sharp line of demarcation between the normal and the abnormal. Life from the beginning to the end is a fight, a struggle, to adjust ourselves to conditions that tend to crush us. Some make these adjustments fairly well while others are overwhelmed and exaggerate certain traits in their effort to meet reality. Dr. Morgan is interested in the development of a normal mind, a well balanced personality. Likewise he is concerned with childhood as a time when foundations of personality are being laid.

This book is not a popular book. It makes no special bid for the favor of the man in the street. It is a textbook for the serious student. Nevertheless it is well written. The author does not use a technical word when another word would do as well. His English is straightforward and clear cut. The book is well organized. At the beginning of each section of every chapter there is a paragraph in heavy type often summing up briefly what has just gone before and preparing the student for the specific material that is to be presented. At the end of each chapter the important technical words like akoasm, optic chiasm and scotoma are defined. It is to be regretted that the author at this point did not indicate how these technical words are to be pronounced. At the end of every chapter there is a list of projects and a brief bibliography. The final chapter of the book, entitled "Mental Hygiene," deals with the positive constructive side of educational mental hygiene.

The teacher or student who wishes to get more than a superficial conception of the mental mechanisms of life would do well to study this volume with care.

2. By John J. B. Morgan, Ph.D. Pp. 627. Longmans, Green & Co., New York, 1928.

THE demand for courses in general science in junior high schools has brought forth a number of books, but none of them is more interesting or practicable to the classroom teacher than "Introduction to Science" [3] by Caldwell and Curtis. It covers the field well and includes a number of excellent chapters on health including "Keeping Clean with Water," "The Human Machine," and "Foods and Their Uses." The book contains many experiments and exercises that will stimulate the thinking of pupils. Teachers will find this valuable not only in a general science course but also in a course on health.

MOST books on the prevention of disease today consider the subject from the point of view of the sanitarian or health officer who deals with communicable disease in people in the mass. Dr. Winslow has just revised his valuable book [4] which concerns itself with what the individual may do to prevent disease.

The first three chapters are devoted to personal hygiene, describing the most healthful methods of everyday living. The remaining chapters give instruction as to how a person may combat various diseases. There is an excellent chapter on sexual hygiene and the prevention of the social, or venereal, diseases.

Dr. Winslow's language is free from technical difficulty and straightforward in its attack on each subject. This popular volume, which has been well tested by many years of teaching in its old form, should be an invaluable textbook for colleges and an excellent textbook for teachers.

HEALTH training is concerned not merely with the physical body but with the proper functioning of the mind in meeting successfully ordinary problems as they arise.

Probably one of the greatest problems of the freshman student in the high school is the problem of how to study. Although many of the failures in high school may be due to inferior intelligence possibly an equal number either fail or approach the borderline of failure because of a lack of skill in mastering lessons. Therefore, both high school teachers and students will welcome Fenton's helpful volume on "Self-Direction and Adjustment." [5]

3. By Otis William Caldwell and Francis Day Curtis. Pp. 654. Ginn and Company, Boston, 1929.

4. The Prevention of Disease in the Individual. By Kenelm Winslow, M.D. Third edition. Thoroughly revised. Pp. 431. W. B. Saunders Company, Philadelphia, 1929.

5. Self-Direction and Adjustment. By Norman Fenton. Pp. 121. World Book Company. Yonkers-on-Hudson, 1926.

New Books *on* Health

Reviewed by
Morris Fishbein, M.D.

WHOLESOME PARENTHOOD

By Ernest R. and Gladys Hoaglund Groves. Pp. 320. Price, $2. Houghton Mifflin Company, Boston, 1929.

THE authors are well known for their ability to put in direct language the facts that have been developed by such psychologists and experts in child training as Watson, Thom and even the leaders among the Freudians. The chapters included in this book are unequivocal presentations of such fundamental problems as the training of the child in good habits, the explanations of sex questions and the prevention of sex difficulties. The chapters on fear, anger, emotions, fixations and similar subjects are fairly adequate presentations for the average reader and the knowledge and instruction are free from technical jargon and involved scientific reasoning and diction.

The parent who wishes to read seriously and earnestly on these subjects will find this book exceptionally helpful, and if his reading stimulates him to more abstract studies the references that are provided will enable him to consult original sources.

MEAT THROUGH THE MICROSCOPE

By Robert Moulton, Ph.D. Pp. 528. Price, $5. University of Chicago Press, Chicago, 1929.

THIS volume on meat is frankly the output of the meat industry, written not as propaganda for more meat eating but primarily for the instruction of those interested in meat from either production, packing or consumption points of view.

Here are the complete technical details relative to the keeping and curing of meats to prevent spoilage. In the latter process the use of sodium hypochlorite is the mainstay. Chapters on the curing of hides, on the manufacture of gelatin and glue, on fertilizers and feeds, have little interest for the reader in public health, although the one on sausage making may appeal particularly to public health officials. The section on fats, oils and soaps has only a vicarious interest for the reader in the health field, but the chapter on pharmaceuticals and glands is a revelation of the progress that has been made in this direction in recent years. The glands, which represent an infinitesimal percentage of the total weight of the animal, constitute today a value in almost inverse relationship. Final chapters on the composition of meat and its relationship to nutrition and on the health problems of meat in general help to round out an exceedingly useful work.

PUBLICITY FOR SOCIAL WORK

By Mary Swain Routzahn and Evart G. Routzahn. Pp. 392. Price, $3. Russell Sage Foundation, New York, 1928.

MUCH of the progress of social work in this land has been dependent on propaganda, particularly through periodicals and the daily press. No doubt much of this propaganda has been obnoxious, exaggerated and false. Nevertheless a great deal more of it has served to focus public attention on problems which formerly interested only a few philanthropists and which are far more likely to find successful solution when they attract community interest. For many years the Routzahns have been giving their advice on the subject of publicity for social work and it is well to have in the form of a book their matured opinions and experience.

This book is divided into several parts, beginning with an analysis of the task of securing attention, continuing through the use of the newspaper and the bulletin or folder to the meeting, the bazaar or exposition, the intensive campaign and the conclusions. The authors rightly rank the newspaper first among all avenues of public information. They recognize the desirability of paid advertising under certain circumstances for the promotion of social work but they consider the matter wholly on the basis of getting the most in the way of returns for the money expended.

Probably the most valuable portion of this book is that which deals with the question of proper display of material in folders, pamphlets and bulletins planned to accomplish a certain end. A knowledge of this section will save money and increase efficiency for any worker in the field. As to the value of the section on public speaking I have my doubts. There are tricks and competencies in this performance that cannot be taught. Especially valuable also is the section on exhibits since it provides for exhibitors critical comments by experienced observers.

WHY WE ARE MEN AND WOMEN

By A. L. Benedict, A.M., M.D. Pp. 270. Price, $2.50. Allen Ross and Company, New York, 1929.

FEW subjects have so constantly interested mankind as the question of determination of the sex of the offspring before conception. Indeed, the next question of interest thereafter is the determination of the sex of the offspring after conception but before birth, a subject on which exact knowledge is now becoming available. Dr. A. L. Benedict reviews the various theories that have held public and medical attention during the last century. Manoilov is authority for the statement that more than a thousand have been printed.

It has been argued that the movement of the tides, the position of the mother in various stages of the process, the time of the conception in relation to the periodic activity of the mother, the strength of the father, the amount of sunlight received and many other factors influence the determination of sex. Manoilov believes that the factor of chief importance is the hormone that comes from the male and female sex glands and which is found circulating in the blood of the mother and of the fetus.

Empirically Dr. Benedict insists that the virility of the male cell at the time of conception as determined by the time of its manufacture in the male sex gland is the matter of major importance. He has been undertaking studies on this point but they are not yet sufficient to warrant conclusions.

Questions *and* Answers

If you have a question relating to health, write to "Questions and Answers," HYGEIA, enclosing a two-cent stamp. Questions are submitted to recognized authorities in the several branches of medicine. Diagnoses in individual cases are not attempted nor is treatment prescribed.

Neuritis

To the Editor:—Please let me know the cause and treatment of neuritis? Is it a form of rheumatism?

C. M. T., Canada.

Answer.—Neuritis is not the same as rheumatism. It means, literally, an inflammation of the nerve. It may be due, however, to the same cause as some forms of rheumatism. It is often apparently caused by some focus of infection in the teeth, tonsils or some other part of the body. Treatment can be given only by one who has carefully examined the patient and is thoroughly familiar with the case.

McCoy, Chiropractor

To the Editor:—Would you kindly give me a report on Dr. Frank McCoy, chiropractor and writer on hygiene? Are his articles on diet and on heart trouble safe to follow? Any suggestions on the subject of valvular heart trouble would be appreciated.

J. B. C., Ontario.

Answer.—HYGEIA has discussed McCoy at different times. A reprint of the matter may be had on request. As to valvular heart trouble, the one indispensable thing for one who is afflicted in this way to do is to consult a competent physician who will advise the patient. Valvular heart trouble may not be serious in some cases, while in others it requires constant care and watchfulness to prevent disaster.

Serum Is Made from Blood, Not Drugs

To the Editor:—Some time ago I read about a recently discovered serum that is used to increase the white corpuscles of the blood. The serum is a combination of selected mercury, arsenic and quinine, and is used in the treatment of chronic discharging sinuses, asthma and tuberculosis of the bone. I should like to know the name of the doctor who made this discovery and the opinion of the American Medical Association concerning its value.

L. C., Pennsylvania.

Answer.—The serum used in medicine is the liquid portion of the blood of an animal, human or otherwise, which separates from the clot after the blood has coagulated. It could not be "a combination of selected mercury, arsenic or quinine" or of any other drugs. Such drugs might be dissolved in serum for injection into the blood stream of a patient or might be administered to the donor of the blood, the serum of which was subsequently to be injected into the blood stream of a person afflicted with some disease. Rarely would there be any advantage in such a procedure.

The drugs mentioned may be given by mouth or by injection in the diseases mentioned but chronic discharging sinuses cannot be treated by medication alone. They nearly all require some surgical measures to get sufficient drainage to eliminate the infection. Asthma is a complicated condition and may require the help of one or more doctors who are especially fitted to take care of the various complications that constitute the disease. A good many asthmatic patients have chronic sinus infection and are benefited only by the correction of the intranasal infection. Tuberculosis of the bone, of course, is a different thing entirely from the other two conditions.

Care of Teeth

To the Editor:—Can one avoid the expense of having the teeth periodically cleaned by the dentist if one prevents the accumulation of any considerable amount of tartar by regular and thorough brushing? At what age is it advisable to have a child's crowded and crooked first set of teeth adjusted? Our dentists differ. Is the so-called dental syringe a satisfactory substitute for dental floss? It is almost impossible for the inexperienced person to manipulate the floss effectively in a small child's mouth.

L. J. F., Minnesota.

Answer.—Some mouths can be kept free from deposits by brushing, but there are many mouths that will accumulate deposits on the teeth even when they are well brushed. Frequently the deposits attach themselves to the teeth under the margin of the gums, and this cannot be removed with the brush.

If a child has crooked teeth they should be straightened as early as possible. A tooth brush, properly used, is all that is necessary for children.

Athletic Rub

To the Editor:—What is a good formula for an athletic rub for the use of the members in our club?

S. S. D., New York.

Answer.—The comfort and benefit from a rub arise from the friction of the skin and the massage of the deeper structures in the act of rubbing. No remedy applied to the skin is of particular advantage. It is desirable to avoid irritation of the skin and so some emollient substance is used, perhaps nothing more than cocoa butter. Alcohol gives an agreeable sensation and so-called rubbing alcohol is widely used.

Surgery on Vaccination Scar

To the Editor:—What is your advice in regard to a vaccination scar on the arm? It is about 2 inches long, is deep like a burn and is terribly disfiguring. Could anything be done in a surgical way to efface this scar?

D. H. A., Pennsylvania.

Answer.—It is impossible to decide this question without seeing the scar. As a rule, unsightly scars which are not too large can be removed by a relatively simple surgical operation. Of course a scar will follow the operation but this will in most cases be an inconspicuous, narrow linear scar. It is for the physician consulted to decide whether the improvement from the operation is likely to be such as to warrant undertaking it.

Stricture of the Throat

To the Editor:—I have stricture of the throat. I have not been able to swallow even water for about ten months and have been very weak. Please send me any information you have about stricture.

E. C. A., Pennsylvania.

Answer.—The sensation of stricture of the throat is not an uncommon symptom and is often produced by a dryness in the throat which develops because of some chronic disease in the nasal passages. Actual strictures of the throat are, on the other hand, quite uncommon and are produced in several different ways.

In the first place, there are certain nervous troubles which cause difficulty in swallowing, giving the

patient the sensations of a stricture. In the second place, actual strictures in the throat occur as the result of healed ulcers—for example, the ulcers that may follow swallowing of lye or any of the diseases that are known to produce ulceration in these parts. Finally, actual strictures of the throat may be produced by tumor formations of which there are a number of varieties, including the simple benign tumors as well as malignant tumors.

It is hardly possible to give an accurate impression regarding the various things that may cause stricture of the throat to any one who has not had medical education.

Books on Symptoms

To the Editor:—Can you recommend a book on symptomatology? There are many books on symptoms of the various diseases, but I have not been able to locate a general one.

C. B. T., New York.

Answer.—There is no recognized book for the general reader on symptomatology. In fact, such a book could hardly be written without doing more harm than good. Scientific medicine has long ago established the fact that it is not possible for a person untrained in medicine to make a diagnosis of disease for himself or for his family, on the basis of a description of symptoms such as one finds in the old time homeopathic handbooks, the family medicine book, and the patent medicine advertisements. The more thoroughly any layman is convinced of this and refrains from speculating about his own condition and the reading of lists of symptoms, the better off he is sure to be.

There is a sane discussion of some of the more important facts relative to hygiene and medicine which can be safely advised to the reader in "The Layman's Handbook of Medicine" by Dr. R. C. Cabot, published by the Houghton, Mifflin Company of Boston, price $3.

Thermometer

To the Editor:—What, in your opinion, is a good thermometer to buy? Is there a difference in makes, as regards reading of registration? Most of those I have seen seem so hard to read. I have often thought of getting one, but wonder if it is wise for a nonmedical person to possess one.

A. L. D., Connecticut.

Answer.—The use of a thermometer by a person who is in ordinary health is not advisable, especially if he is inclined to worry about himself. There are conditions, however, in which the taking of the temperature at proper intervals can be done by the patient, directed by the physician. The family physician should advise as to the best thermometer and instruct his patients in its use.

There are cheap thermometers on the market that vary one or two degrees from the correct standard. The family physician knows what instruments are dependable.

Deviated Septum

To the Editor:—Is there anything except an operation that will cure or relieve a deviated septum in the nose? One nostril is wholly and the other partially blocked. Is this likely to affect the hearing? I have been told that an operation on the nose is seldom wholly successful. What is your opinion of this? The patient is a young man, 20 years of age, and is extremely susceptible to colds. Would this condition of the nose cause this?

R. M., Massachusetts.

Answer.—Many cases of deviation of the nasal septum do not need correction by operation. Some operations have been done for cases of this type and no relief has followed. Of course, no one can advise in a particular case in the absence of an examination.

The best suggestion we can make is that the young man ask his physician to refer him to a nose and throat specialist who has had large experience.

Body Temperature

To the Editor:—I am 32 years old, 5 feet 10 inches tall, and weigh 165 pounds. For six years I have taken my temperature at intervals. It varies from about 97 F. at night to 101 F. or slightly higher in the afternoon or evening. These temperatures register consistently and regularly. I am a lawyer, am rather nervous and high strung, and am at my desk most of the day. I eat a moderate breakfast, a fairly large lunch (usually with meat), a hearty dinner and a bite in the evening an hour or so before retiring. My physician has examined me thoroughly and finds my blood pressure normal and no sign of any disease. He regards the high temperature as of no importance, saying that some persons run higher temperatures than normal. He assigns my high strung nature as the cause.

P. F., New York.

Answer.—It is normal for some persons to run a higher temperature than the so-called normal average, 98.6 F. In fact, the clinical normal may be considered to vary between 97.8 and 99 F. (McDowall). In this case, however, the clinical variation exceeds the range that is commonly accepted as occurring in normal men; namely, 1.8 F. (Hewlett). No variation of 4 F. in the diurnal temperature could be found in the physiologic literature. In fact one text postulates that an elevation of rectal temperature above 37.2 C. (98.96 F.) is indicative of a disease process (Lüdhe-Schlager).

It seems probable that if temperatures were taken as frequently of normal men and women as is their pulse, while symptomatically well, as marked variations in temperature would be found as are found in the normal pulse rate. Assuming that the inquirer has taken his temperature under standard conditions and that he is subjectively well, there is no cause for anxiety, particularly since his physician, after thorough examination, including the chest, has been able to exclude disease processes.

The figures given above refer to temperatures taken during repose in bed. Moderate work, even such work as is done at the desk, is known to elevate the temperature above the usual diurnal variation. If a heavy meal is taken at noon and at night, including appreciable meat, the temperature will be further elevated.

Spread of Infection

To the Editor:—Could old stamps brought from Cuba in a stamp collection cause a streptococcic infection in a young boy's throat? Could such an infection spread from the throat to the intestines in a week's time, causing death? Could such a throat infection be checked from spreading?

S. U., Wisconsin.

Answer.—It is not probable that such infections would arise in this way. Streptococcus infections may extend very rapidly and cause death within a few days in spite of all efforts to check them.

Tapeworm

To the Editor:—What are the symptoms of tapeworm? Does it ever cause constipation?

J. M. R., North Dakota.

Answer.—A tapeworm does not give rise to any symptoms that are absolutely characteristic; indeed, many persons harbor a tapeworm without knowing that they have such a thing. When there are symptoms, they are those of intestinal disturbance, differing little from intestinal irritation due to other causes. A tapeworm would not be likely to cause constipation.

The sure way to determine whether one harbors such a parasite is to watch the stools carefully. Whenever a tapeworm is present segments of the parasite are being broken off from time to time and are discharged in the stools. This is the only positive evidence that tapeworm is present.

Tuberculosis of the Hip

To the Editor:—Is there a cure for tuberculosis of the hip joint?

R. L., Kansas.

Answer.—Tuberculosis of the hip joint is usually treated by a fixation of the joint by a cast or splint, together with attention to the general health to increase the resistance by proper food, exposure to sunlight and the best possible hygiene. One of the methods of treatment is to apply extension to the leg with the patient in bed or with suitable splints. In extreme cases, operation may be necessary.

Metal Containers for Food

To the Editor:—What effect does tin have on milk? Should milk stand in an open tin container several hours? What effect do galvanized pails or tubs have on meat or fish? Should they be allowed to stand in such containers any length of time? Could ptomaine poisoning come from using meat from a galvanized container?

V. H. W., Washington.

Answer.—Tin is not attacked by any of the ordinary food substances, even when they have become somewhat spoiled. Formerly, the solder used in sealing tin cans occasionally contained lead, and there might once have been danger of lead poisoning from this source.

Milk standing in any vessel for several hours outside of a refrigerator is likely to become contaminated, not from the vessel in which it is contained but from the germs in the air.

There is no evidence that the use of galvanized pails as containers has resulted in harm. As in the case of milk, however, meat or fish or any food should not be allowed to stand in an open vessel in a warm temperature for any length of time.

Ptomaine poisoning would not result from taking food that has been in a galvanized iron container.

Symptoms of Pregnancy

To the Editor:—Is it possible for a physician or specialist to tell by examining the urine whether a woman is pregnant or not? Please give some of the first symptoms of pregnancy. What causes a person to gag or taste all the food that one has eaten for several hours after?

H. K., Louisiana.

Answer.—It is possible to determine pregnancy by examination of urine, but at the present time the test is not always reliable. Since the test has proved erroneous in 25 per cent of the patients, one should always correlate it with other findings.

Few symptoms are noted in the first four weeks of pregnancy. Soreness and growth of the breasts and absence of the menstrual period are the earliest signs. The following symptoms usually appear about the sixth week: (1) nausea, occurring usually in the morning, associated with vomiting; (2) increase in the amount of saliva, and (3) increase in frequency of urination.

In a person whose gastro-intestinal tract is sensitive, various functional disorders may present themselves during the early weeks of pregnancy. This is due to the marked change that takes place in the organs of internal secretion. Usually these functional changes are mild and soon pass away. This will explain the cause of gagging and tasting food some time after eating in most cases. If, however, the symptoms persist later than the twelfth week of pregnancy or get markedly worse some other factor may be present.

It is advisable to obtain the services of a physician early in pregnancy so that the nausea and vomiting may be controlled or stopped. One should see the doctor at the beginning of the sixth week of pregnancy and at regular intervals thereafter throughout pregnancy.

Navel Discharge

To the Editor:—I am troubled with a slight discharge from the navel. When closely observed the interior of the navel is very red and moist, and the discharge has an offensive odor. Would this be a symptom of disease? I am troubled with constipation; could that cause it? I have tried to relieve myself of constipation but my many efforts have been in vain.

A. R., Illinois.

Answer.—Previous to birth, certain structures in the umbilical cord pass through the umbilical opening connecting the circulatory system of the fetus with the placenta, or afterbirth. Normally, when the umbilical cord is severed, these structures close and leave only a depression in the wall of the abdomen, which we know as the navel.

Exceptionally, the closure of these structures may not be quite complete and a small portion of the outer end of one of the ducts may remain open, discharging a slight secretion. Or, a small ulcer may remain in the deeper portion of the navel. It is extremely unlikely that any condition present in the navel at the age of 20 is of serious moment, but it may be annoying and therefore it will be worth while to have it examined by a physician. It is not likely that it has anything to do with constipation.

Poor Circulation

To the Editor:—My work confines me closely indoors and I find my general health is beginning to suffer from lack of exercise. When I am chilled, I find my finger-nails, particularly on the left hand, turn blue. I am frequently awakened from my sleep by a numb sensation in my hands. Could you please tell me some good exercises or methods to improve poor circulation? What exercises are good to develop the chest and to reduce hips?

C. M. S., Missouri.

Answer.—If a person's fingernails turn blue when he is chilled, it is possible that some condition of the circulatory system is responsible for the trouble and ought to be carefully investigated by a physician.

Exercises probably would not be of special value for this symptom. Concerning exercises for other purposes, HYGEIA has published a pamphlet on exercises for the business woman which is helpful.

"Inecto Rapid" Hair Dye

To the Editor:—Is there any danger of poison from using "Inecto Rapid" hair dye?

J. M. McC., Nebraska.

Answer.—The original product sold under the name of "Inecto" was a paraphenylendiamine preparation, and, as such, was responsible for many cases of inflammation of the skin (dermatitis). As a result of these untoward effects, the American company that sold the product had a chemical investigation made, looking toward the elimination—if it was possible—of the irritating effects of paraphenylendiamine. It is now claimed that paraphenylendiamine has been entirely eliminated as the key material and a less toxic substance substituted. This is put out under the name "Notox" and it is claimed to be practically harmless. We have received some complaints from physicians and others regarding ill effects said to have followed the use of the present substance, Notox. These have been comparatively few, however, and for every such case, there may be hundreds that use the preparation without harm. In the application of hair dyes, much depends on the skill with which the product is applied.

Hay-Fever

To the Editor:—Does hay-fever ever develop into a serious ailment?

J. G., Texas.

Answer.—Hay-fever is often accompanied by asthma, which incapacitates a person and makes him miserable but rarely leads to a fatal termination.

Guard Them Against— Dangerous Infection

Hexylresorcinol Solution S. T. 37 should be in every medicine chest as a *Safe Antiseptic for Abrasions, Cuts, Burns and Scratches.*

ALMOST every day skin abrasions happen in every home. The youngsters get a skinned knee, a burned thumb or a cut finger.

Protect them against dread *infection* which may lead to serious consequences. Apply Hexylresorcinol Solution S. T. 37 freely—*at once.* Bandage lightly, then call the doctor.

Hexylresorcinol Solution S.T. 37 is highly antiseptic and destroys germ-life on less than 15 seconds contact, yet it is non-irritating and soothing—a decided aid in the natural healing of the delicate injured tissues. Deeply penetrative—it reaches *into* the wound where *infection* may lurk.

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HOW would you feel if you could not read the news of the world? No newspapers, magazines, books, letters, not even a danger sign or a warning notice?

"Thank God! At last I'll be able to read and write."

It may surprise you to learn that the majority of illiterate persons in the United States are native born. Many of them have never had a chance to learn and do not know where to look for instruction.

Somewhere near you is a grown person groping in the dark, in many ways helpless as a child, because he cannot read or write. You can bring sunlight into his darkened life. More than that, you may be the means of bringing him better health.

Illiterates are not hard to find—a servant, a farmhand, an employee in your own or your neighbor's shop, a laundress, a deliveryman, a laborer in your neighborhood.

Today he cannot read messages on disease prevention. He does not know, unless someone tells him, important rules of health or how to keep his family from having diphtheria, smallpox, or typhoid fever. These and other preventable diseases often make illiterate localities their breeding places and thus endanger the health of the educated, despite their precautions.

There are more than 5,000,000 men and women in the United States who cannot read health messages—more than 400,000 of them are in the State of New York, more than 300,000 in Pennsylvania, about 150,000 in Massachusetts. You can find them in every state of the Union—in cities, in towns and in country districts.

Perhaps you share the mistaken belief that it is impossible to teach grown-up illiterates and that they are content to be illiterate.

Get the confidence of an illiterate and ask him if he would like to read and write. Tell him he can learn to write his name in 30 minutes and read in a few months. In all probability his eager response will amaze you.

Will you give someone a present that he would not exchange for hundreds of dollars—the ability to read and write—a present which costs you nothing?

Find *your* illiterate. If you will help him to learn to read and write, the Metropolitan Life Insurance Company will send you, free of cost, grooved writing pads and illustrated lessons for beginners.

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Infant Feeding

To the Editor:—About six weeks ago, I was obliged to stop nursing my 9 months old baby and give bottle feedings. During the sixth month I started cereal feedings and during the seventh, vegetable feedings. Now at 9 months she has two cereal feedings, one vegetable feeding and one bottle feeding per day. Is it necessary to boil all utensils used for cereal and vegetable feedings, orange juice, cod liver oil, apple sauce and bacon? I prepare a two day supply of vegetables at a time, keeping one jar in the refrigerator for the second day. It seemed to me that this jar should be sterilized before using just as I sterilize the bottles for milk. My task is becoming endless and I should like to know whether I am doing unnecessary work. At what age may I safely stop boiling bottles for the feeding of milk? R. W. B., Ohio.

Answer.—There is a great deal of unnecessary work and nonsense concerning the sterilizing of bottles. About twenty years ago, children's doctors thought that all cases of malnutrition with diarrhea were due to certain definite disease germs. However, the last twenty years have taught us that much infantile diarrhea is due to improper meal formulas, to improper clothing of the baby, and to bad hygiene in the home. The only sickness that results from specific germs in the food are such diseases as typhoid, dysentery, cholera and tuberculosis. Whenever there is any suspicion that such germs lurk in the water, all utensils should, of course, be boiled.

However, the usual germs that are on the cooking utensils are the same ones that are on the floor and on the baby's clothes and on his hands, which are frequently in the mouth. These are harmless for the most part.

It is not necessary to sterilize all utensils, but it is necessary to keep them perfectly clean. If particles of food are left in the bottles, then any disease germs lurking around would find material on which to grow. All that is necessary is scrupulous care in the washing of the utensils.

Effects of Infectious Diseases

To the Editor:—What are the causes of the harmful after-effects of scarlet fever, smallpox and other infectious diseases, such as heart trouble and kidney disease? M. A., Georgia.

Answer.—The after-effects of infectious diseases are for the most part due to what is called secondary infection; that is, infection usually by pus germs.

Amebic Dysentery

To the Editor:—I should like to have some information about amebic dysentery caused by *Entameba histolytica.* What is the correct diet for one who has this trouble?

H. H. M., New York.

Answer.—In amebic dysentery caused by the infection of the body by *Entameba histolytica,* diet is governed by the severity of the intestinal manifestations.

In acute cases, the patient should be given a liquid diet consisting of milk, whey and broths. As the condition improves, this diet can gradually be increased with egg albumin and semisolids such as milk toast, rice cooked in milk, broth and gruels of tapioca.

Solid food should be abstained from until a few days after the disorder has abated. All coarse, indigestible food should be avoided. Potatoes have proved irritating in many cases and should also be avoided. Meat, when given, should always be scraped; that is, very finely divided. Fruit juices are often well borne, and also thoroughly cooked cereals.

It is one of the most important duties of the attending physician to advise a diet that is proper for the condition present, for the condition may change from day to day.

Inherited Mental Disease

To the Editor:—I am engaged to marry a man in whose family there is a definite trend toward psychosis. The mother has shown signs of it ever since her children were born. Her two daughters have both developed the same trouble since their children were born. While there has been temporary relief in both cases, recovery is not permanent and there is frequent relapse. I do not suppose that such a condition would develop should I marry a man of that family and bear children but I should be interested to know if such a tendency could be inherited through the father. Could we expect that the man I marry would be inclined to inherit a tendency to any kind of psychosis? Is there any test that could be given now which would show a negative or affirmative trend toward this psychosis? Is such a family trend serious enough that one should not consider marriage?

A. R., Kentucky.

Answer.—It is a generally accepted fact that there is a predisposition to the development of psychosis in families. There is no specific test that could be given to determine this. It would be wise if the engaged couple would frankly consult a psychiatrist.

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Wheatena is the cereal made from the entire wheat kernel—ripened in sun-drenched fields... then roasted and toasted to give it a delicious nut-like flavor.

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Wheatena is *quick-cooking*—ready in 2 or more minutes (for babies, longer)—and costs you less than 1 cent a dish to serve.

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ROCKEFELLER FUND REPORTS FOR 1928

Twenty major projects in health work were included in the activities of the Rockefeller Foundation during 1928, according to the annual report recently issued. The Foundation disbursed $21,690,738 in its world-wide program.

In the United States the principal work has been concerned with the development of local health organizations, especially full-time county health units in the Mississippi flood area. Fellowships have been provided students from forty-one countries to study in the United States or abroad. The Foundation has assisted in a number of mental hygiene projects in the United States and Canada.

Yellow fever, malaria and hookworm have been the subjects of special studies in many parts of the world. It was while studying yellow fever on the West Coast of Africa as part of the Foundation's work that Hideyo Noguchi, the famous bacteriologist, contracted the disease and died in May, 1928, just as he was ready to sail home.

Hookworm still exists in many countries in tropical regions, though it has been largely eradicated from the United States. Antihookworm campaigns have not only been a blessing to the victims of that disease, but have opened the way toward more inclusive health programs, the report declares.

Twenty foreign governments from the West Indies through Europe to the Philippines were assisted by the Foundation to carry out antimalaria measures or research, in addition to the promotion of research in the United States.

SMALLPOX IS EXPENSIVE BUSINESS

Smallpox cost the state health department of Illinois $65,800 during the first six months of 1929, the *Illinois Health Messenger* reports. This amount included all the expenses of the field personnel in the suppression and control of the 2,632 cases that occurred in that period.

Besides this, local health departments spend considerable money and the sick persons not only incur expense for medical treatment but lose time from their occupations. Every case of smallpox requires the isolation of at least two persons. Thus not less than 5,264 persons had to spend twenty-one days each in quarantine, a minimum of 110,544 days lost. Vaccinations at any price from one to five dollars seem cheap in comparison, comments the *Messenger*.

Are You Interested in a

SAFE and *SANE*

PHYSICAL EDUCATION PROGRAM?

We advocate not "Fads and Fancies" but a practical scientific and educational program.

Why not join this Association and thus increase the possibilities for good work in physical education?

REGULAR MEMBER, $5.00
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These memberships include the receipt of the AMERICAN PHYSICAL EDUCATION REVIEW, the only official magazine on physical education published in the United States.

Write for sample copy of the Review, application blanks and information to

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JUBILEE BABY ARMLET
Aluminum—Adjustable

$1.00 Pair
Also corrects Nail-Biting

A safe, easy, kindly way. Invaluable if suffering from Eczema or other skin disease. Allows free movement, even considerable bending of elbow. Loose fitting, light, sanitary, cool. Snap fasteners, adjust to 5 different sizes. Handy. At drug or surgical supply houses, or postpaid on receipt of $1. If more convenient, order C.O.D. and pay postman $1.10 on delivery.

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JOHN'S VACATION—For boys from 10 to 15 years old.

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MARGARET, THE DOCTOR'S DAUGHTER—For girls from 12 to 14.

LIFE'S PROBLEMS—For young women from 15 to 18.

Prices—Single copies of any of the above pamphlets, 25 cents prepaid. In lots of four, 75 cents prepaid. Discount on quantities.

AMERICAN MEDICAL ASSOCIATION
535 N. Dearborn St., Chicago

OLD DUTCH CLEANSER LEADS THE WAY WITH HEALTHFUL CLEANLINESS

THE HIGH STANDARD of quality and ultra-modern efficiency of Old Dutch make its general use one of the greatest helps in the home. Millions of housewives have found that it pays in more ways than one to use Old Dutch.

OLD DUTCH IS SAFE. Contains no acids, no caustics and is entirely free from sand and grit. It doesn't scratch. Surfaces cleaned with Old Dutch are more easily kept clean. Old Dutch is kind to the hands, too.

ECONOMICAL; because of the marvelous efficiency of its minute flaky flat-shaped particles, Old Dutch does more cleaning. A little goes a long way.

OLD DUTCH is perfect for porcelain and enamel, snow-white or gayly colored, as well as for floors, painted woodwork and furniture, tile, windows and window sills, marble, mirrors and metal fixtures, kitchen utensils, steps, refrigerators, pantries, etc.

A HEALTH PROTECTION, because Old Dutch assures Healthful Cleanliness . . . searches out, captures and banishes dangerous invisible impurities and all forms of visible dirt. Old Dutch leaves everything spick and span, hygienically clean.

OLD DUTCH is the greatest advance in modern cleaning efficiency. There is nothing else like it for conserving energy, reducing cleaning expense, protecting the modern beauty of the home and for safeguarding your family with Healthful Cleanliness.

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AN ANTISEPTIC LIQUID
Keeps Your Armpits Dry and Odorless

NONSPI destroys the odor and diverts the underarm perspiration to parts of the body where there is better evaporation—and need be used on an average of but two nights each week.

NONSPI will also protect your clothing from those ruinous, discoloring, destructive perspiration stains, in addition to keeping your armpits dry, odorless and sweet.

More than a million men and women keep their armpits dry and odorless and save their clothing by using this old, tried and proven preparation which is used, endorsed and recommended by physicians and nurses.

Get a bottle of NONSPI today. Apply it tonight. Use it the year around—spring, summer, fall and winter. Your Toilet Goods Dealer and Druggist has it at 50c (several months' supply) or if you prefer

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Kansas City, Missouri

Send free NONSPI sample to

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TRADE NONSPI MARK

Gymnastics for Elderly Men

To the Editor:—I belong to the business men's class of a gymnasium. The ages of the members range from 50 to 80 years. Some time ago, a member of the class, 70 years of age, stood on his head and immediately died of apoplexy. Since then the instructor has been careful to warn against assuming an inverted position for more than an instant. Please tell this class of elderly gymnasts whether the instructor is not overcautious in this matter. Is it only a matter of age, or is it possible that a man of advanced years can still have arteries of sufficient elasticity to stand the excessive blood pressure caused by hanging head downward from a horizontal bar, for instance? Could not a physician, by an examination, ascertain about how much of this sort of thing a man can stand? E. E. T., New York.

Answer.—It is not only unwise but it is dangerous for a man more than 60 to do the "head stand" or to perform such feats as hanging by the knees. The physical instructor is sane and safe in omitting such exercises. The muscles may stand the demand made on them but the heart will not. There are but few exceptions to this.

Any class of men between the ages of 60 and 80 should take moderate exercises and the exercises should be given slowly. The chemical changes in the contractile tissues are helpful if such advice is followed out.

Elderly persons should take some form of mild exercise daily but such men and women should use judgment and consult their medical advisers. It is not wise for adults who have passed the three score year mark to play tennis. Golf is better. Good posture taken forty or fifty times a day by any person over 55 is helpful, as large groups of muscles are brought into safe and healthy action. It takes two seconds to take the erect posture and if held sixty seconds the results are astonishingly good.

Morning Sickness During Pregnancy

To the Editor:—What is the cause of morning sickness during pregnancy and is there any cure? J. L. C., Oklahoma.

Answer.—Morning sickness is abated or prevented by diet and by medicine often without difficulty, but the diet and the medicine vary according to the individual case. The nature of morning sickness and its causes vary in different patients and cannot be given without extended comment.

nutrition

NO ONE needs a more carefully selected choice of nutritious and healthful foods than the young mother. The fact that bread is almost always included in a nursing mother's diet is proof of its value.

The flour, milk, yeast and other ingredients of bread supply heat, energy and minerals in easily digestible form.

Bread is an essential part of every balanced diet along with meat, fruit, vegetables and dairy and poultry products for young and old. Bread and milk, bread and meat sandwiches, bread and butter and many other combinations make bread the greatest "carrier" of these other necessary items of the diet.

All the extensive scientific experiments have, according to our interpretation, proved that bread is a valuable food. Our modern white bread supplies energy-building carbohydrates and, made with milk and yeast and other ingredients, proteins of high quality. It furnishes many of the necessary minerals, and especially the much needed calcium and some of the vitamins. And, moreover, white bread is one of our most digestible foods, its food contents being quickly and easily absorbed by the body.

Send for

"FACTS ABOUT BREAD"

As one of the key people who direct the food habits of the nation, you are interested in knowing all "The Facts About Bread and Its Rightful Place in the Diet." Under this title we have published a book of authentic statements by eminent physicians, scientists and educators. We will be glad to send you without charge a copy of this booklet.

KNOW *the* FACTS ABOUT BREAD

The above statement has been submitted to and approved by a group of disinterested and competent investigators in the field of nutrition, selected by the editor of The Journal of the American Medical Association. These investigators include Professors Graham Lusk, E. V. McCollum and Lafayette B. Mendel.

{ For complete information on nutrition see books written by these authorities }

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Minneapolis, Minn.

Please send me, without charge, a copy of "The Facts About Bread and Its Rightful Place in the Diet."

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BREAD *IS* THE STAFF *of* LIFE

This advertisement and the booklet "The Facts About Bread and Its Rightful Place in the Diet" are published by Washburn Crosby Company, millers of Gold Medal Flour, to assist in the broadcasting of authoritative information about bread.

Baby's Drinking Water
Is a Matter of Vital Importance

Robust adults frequently suffer from a change of drinking water; tender babies should not be exposed to this risk.

Use *Poland Water*

in the feeding bottle—it is always the same, bland and pure.

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680 Fifth Avenue *Dept. L* New York

Muffins *for* Diabetics

Palatable muffins and more than thirty other foods, each strictly starch-free, may be included in your diet when you use Listers casein-palmnut Dietetic Flour.

STRICTLY STARCH-FREE

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Listers CASEIN-PALMNUT DIETETIC **Flour**

is strictly starch-free, self-rising and easily made into a variety of foods in any home. Recipes accompany each carton of flour. Large carton, Listers Flour (enough for 30 bakings) . $4.85.

Sold by leading druggists, fancy grocers or direct

LISTER BROS. INC. 41 E. 42nd St. NEW YORK, N. Y

Germ Fastidiousness; Corns; Burst Blood Vessels; Embolism

To the Editor:—1. Is it not possible for a person to become too fearful of germs? I know a woman who will not wear underwear that she accidentally drops on the floor or will not use anything that has been on the floor. Of course, I realize one should not eat anything that has fallen on the floor, but I think one can go too far. Am I correct? 2. My husband has a soft corn and his mother has suggested that he wrap a piece of black silk around the toe. Is not such an idea a mere superstition? 3. Does the breaking of a blood vessel always result in death? Can one break one unknowingly, or does it immediately become apparent? 4. Do embolisms occur only when a complication has set in, or can they occur after any operation or after childbirth? Is a person reasonably safe after the twenty-first day or have embolisms been known to form after that period? Does the wound itself have anything to do with it so that in case it does not heal fast or is irritated after the operation a blood clot could form?

G. C., Illinois.

Answer.—1. One can indeed be too fastidious about contamination through germs.

2. There is no possible way in which the wrapping of black silk around the toe can cure a corn.

3. Small blood vessels frequently burst without serious result. Doubtless this sometimes occurs in the interior of the body without the fact becoming evident.

4. Embolism occurs when a small portion of the thrombus, or blood clot, is carried into the general circulation to some other blood vessel. It may occur at any time when there is a thrombus present.

Face Creams

To the Editor:—What is the difference in face creams made with a mineral oil base and those made with a vegetable oil base? Some manufacturers of what are supposedly the highest grade of face creams advertise that they use nothing but mineral oil and that their creams contain no dangerous vegetable oils; others stress the fact that their creams are made of pure vegetable oils. Will a vegetable oil cause hair to grow on the face?

E. J. B., Colorado.

Answer.—There is probably no material difference in the mineral as contrasted with the vegetable oil bases used in the manufacture of face creams and similar cosmetics. We know of no evidence that vegetable oils cause hair to grow on the face.

WHEN THE CHILD THAT *needs* VEGETABLES DOESN'T *"like"* THEM!

WHEN children who should eat plenty of fruits and vegetables don't "like" them—there's a difficult problem easily solved with Knox Gelatine Vegetable Salads and Fruit Desserts.

When vegetables and fruits are combined with Knox Gelatine they have a new appearance—a different flavor. Children *love* the gelatine—they enjoy eating the fruits or vegetables. And the gelatine actually aids their digestion and increases their food value.

Knox Sparkling Gelatine is a protein in its purest form—the *real* unflavored, unsweetened, unbleached gelatine. When you prescribe gelatine, be sure to specify Knox, the *real* gelatine. It should not be confused with jelly powders which may contain as high as 85% sugar and only sufficient gelatine to form a jell.

May we send you recipes—and booklets. Our complete data on gelatine, covering several phases of dieting, will be interesting and helpful to you. Please check the booklets you wish and send us the coupon.

PERFECTION SALAD

(6 Servings)

1 level tablespoonful Knox Sparkling Gelatine, ¼ cup cold water, ¼ cup mild vinegar, ¼ cup sugar, 1 tablespoonful lemon juice, 1 cup boiling water, ½ teaspoonful salt, ½ cup cabbage, finely shredded, 1 cup celery, 1 pimento, cut in small pieces, or 2 tablespoonfuls sweet red or green pepper.

Soak gelatine in cold water about five minutes; add boiling water, vinegar, lemon juice, sugar and salt. When mixture begins to stiffen, add remaining ingredients. Turn into wet mold and chill. Remove to bed of lettuce or endive. Garnish with mayonnaise dressing, or cut in cubes and serve in cases made of red or green peppers, or turn into molds lined with canned pimentoes.

TOMATO JELLY

(8 Servings)

2 level tablespoonfuls Knox Sparkling Gelatine, ½ cup cold water, 3½ cups canned tomatoes, 2 tablespoonfuls onion juice, ½ bay leaf, few grains salt, stalk celery, few grains cayenne, 2 tablespoonfuls mild vinegar or 2 tablespoonfuls lemon juice.

Soak gelatine in cold water about five minutes. Mix remaining ingredients, except vinegar, bring to boiling point and let boil ten minutes. Add vinegar and soaked gelatine, and when gelatine is dissolved, strain. Turn into wet molds, and chill. Remove from molds to bed of crisp lettuce leaves and garnish with mayonnaise dressing; or the jelly may be cut in any desired shapes and used as a garnish for salads or cold meats. Dressing may be forced through a pastry bag and tube.

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Please send me a copy of your new recipe book. I shall also like to have the special booklets (check booklets desired).

( ) Electrical Refrigerator Recipe Book; ( ) Varying the Monotony of Liquid and Soft Diets; ( ) Diet in the Treatment of Diabetes; ( ) The Value of Edible Gelatine; ( ) The Health Value of Knox Sparkling Gelatine; ( ) Reducing Diet; ( ) Recipes for Anemia.

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Address .....

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—Just present coupon below to your grocer! Good for full-size package at all grocers'

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Pettijohn's

WHOLE WHEAT

HERE'S a chance to change your breakfast for three weeks at no cost. A full-sized package of Pettijohn's—the whole wheat cereal—free to you, when you present the attached coupon to your grocer. We pay him. You pay nothing.

Your breakfast starts the day right—or wrong. Sluggishness, irritability, headache is often due to body disorders which could be corrected by the right food!

Pettijohn's is a whole wheat, the pure grain—with all its calcium, phosphates, iron; its vitamin content unimpaired; its nutritive carbohydrate and protein.

Pettijohn's is cooked, ready to eat, in 3 to 5 minutes. Try it. Get your free package today.

11-14

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Good for Full-Size Package

Fill in your name and address, clip, and present to grocer.

Name.....

Address.....

MR. GROCER

The Quaker Oats Company hereby promises to pay you the full retail price of a package of Pettijohn's on presentation of this coupon to The Quaker Oats Company, 80 E. Jackson St., Chicago, when duly signed by the person who receives the free package. Only one to a family.

No payment will be made to coupon brokers. No coupons redeemed after November 15, 1929

THE QUAKER OATS COMANY

MEXICO DEDICATES NEW RESEARCH BUILDING

Modern facilities for public health administration and research are available for the first time in Mexico with the completion of the new Institute of Hygiene at Tacuba, one of the outlying sections of Mexico City.

Biologic products, such as vaccines and serums, have not been produced in Mexico until a comparatively recent time. But progress in public health demanded that these important agents be prepared in the region where they were to be used, for many reasons. In the first place biologic products are likely to suffer deterioration in shipment when imported from such distances. Their high cost restricted the amount that could be bought. Moreover, Mexican climatic factors create disease conditions peculiar to the country, which made investigations in other countries inapplicable to local conditions.

The Institute of Hygiene has been in existence since 1895, but never at any time has it been in a position to respond to public needs, says an article in the *Bulletin* of the Pan American Union. The new building has nineteen different sections, comprising buildings for offices, for various kinds of laboratories, stables for horses used in making serums and special buildings for other laboratory animals.

Since the construction of the new institute, the bureau of health has been in a position to combat epidemics more effectively and with less expense than ever before. Moreover, it now has an institution where all sanitary problems which, because they exist only in Mexico, have not been solved by any other nation, may be exhaustively studied. An unremitting campaign against smallpox has been made possible and something has been done with scarlet fever and diphtheria. A study of measles has also been made and a study of scorpions and their venom is now in progress. Similar work will be done on native snakes.

SMALLPOX IN CALIFORNIA

Smallpox has increased alarmingly in California since the compulsory vaccination laws were rescinded in 1923, according to Dr. Frederick Eberson of the University of California Medical School.

The risk attending vaccination has been grossly exaggerated by its opponents, Dr. Eberson observes. But antis to the contrary, vaccination is not dangerous. Even a sore arm is rare if the spot is kept clean and the arm rested.

Now that School is Open Again

Contact with School Mates Calls for *Special Precaution*

You can't be sure what little heads and hats will come up against all day long at play or in classes. But *you can be sure* that they will be immune to embarrassing head troubles if you shampoo them weekly with

DERBAC

A Unique Health Shampoo

Its pine tar benefits the scalp; its cocoanut oil keeps hair soft and glossy.

FREE TO CHILDREN

A new, amusing booklet, with pictures, all about hair, written to interest children in its care will be sent to each child whose name and address is given us. The cover, as shown above, is in bright colors.

Copies also free to physicians, nurses and teachers

Recommended by Boards of Health and of Education and by teachers, nurses, and doctors all over the United States.

At your druggist's, or send 25c for a 20-shampoo cake to

CEREAL SOAPS CO., INC.

Dept. H-6 **334 E. 27th St., New York**

Watch

The Busy-Kiddie

TRADE MARK

in September

We are now signing off for the summer, but are doing business at the same old stand.

Glad to hear from you.

Standard Pressed Steel Co.

Makers of "Busy-Kiddie"

Box 504 **Jenkintown, Penna.**

Representatives Wanted

Write Circulation Dept. of Hygeia

U. S. MOVES TO CHECK EPIDEMIC MENINGITIS

Stringent regulations to prevent the introduction of more cases of cerebrospinal meningitis into this country from China and the Philippines were recently issued by President Hoover.

Seventeen passenger vessels have arrived at American ports with meningitis on board since November, 1928, according to *The Journal* of the American Medical Association. The disease has spread in Pacific coast cities principally through Filipino immigrants and public health authorities do not believe that the epidemic is waning.

The regulations provide that passengers may embark only from Shanghai and Hongkong in China and from Manila in the Philippines and then only under direct supervision of the U. S. Public Health Service. Ships' officers and cabin passengers must present certificates from physicians that they are free from disease and furthermore that they have not been in contact with meningitis for two weeks before sailing.

Steerage passengers are still more rigidly restricted. They are to be detained in quarantine for two weeks before embarking, during which time inspection is to be made twice daily, and they will be allowed to embark only if no cases of meningitis have been found. These passengers will not be allowed to go ashore at any ports and all communication between those on board and persons on shore will be forbidden.

The authority for the drastic measure of restricting immigration in this manner is derived from an Act of Congress passed in 1893 at a time when Europe was experiencing a severe outbreak of cholera. The danger was over before the act was passed, however, and the authority it gives is thus invoked for the first time.

AUSTRIAN PHYSICIAN GETS DANA MEDAL

Dr. Ernest Fuchs, of Vienna, Austria, will receive the 1929 award of the Leslie Dana Gold Medal for outstanding work in the prevention of blindness and conservation of vision, the National Society for the Prevention of Blindness has announced. The presentation will be made at the International Ophthalmological Congress in Amsterdam, Holland, on September 10, by Dr. William H. Luedde of St. Louis, representing the Missouri Association for the Blind, through which the medal is offered annually by Mr. Leslie Dana, a citizen of St. Louis.

Colgate's Cleans Teeth Better

because actual scientific tests prove that it has highest penetrating* power

Its active, penetrating foam removes decaying impurities from those hard-to-reach places where the ordinary tooth-paste cannot go.

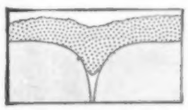
Colgate's is more than a mere surface polisher. It is the protective dentifrice with that wonderful penetrating foam accepted by science as having a higher penetrating power* than any of the leading dentifrices on the market.

This active Colgate foam literally washes away the decaying food particles and mucin deposits lodged in crevices where the ordinary toothpaste can't reach.

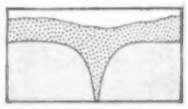
Colgate's penetrating foam possesses a remarkable property ("low surface-tension"). This means that it penetrates into every tiny crevice. There it softens and dislodges the decaying impurities, washing them away in a detergent wave.

In this Colgate foam is carried a fine chalk powder, a polishing material used by dentists for polishing the enamel safely and brilliantly.

* How Colgate's Cleans Crevices Where Tooth Decay May Start



Greatly magnified picture of tiny tooth crevice. Note how ordinary, sluggish toothpaste (having high "surface-tension") fails to penetrate deep down where the causes of decay lurk.



This diagram shows how Colgate's active foam (having low "surface-tension") penetrates deep down into every tiny crevice, cleansing it completely where the toothbrush cannot reach.

Try Colgate's one week FREE

COLGATE, Dept. B-1803,
P.O. Box 375, Grand Central Post Office, N.Y.C.

Please send a free trial tube of Colgate's Ribbon Dental Cream, with booklet "How to Keep Teeth and Mouth Healthy."

*Name*_____

*Address*_____

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Light—
without deterring ventilation

Athey shades are ideal for Doctor, Dentist or Surgeon.

Athey Shades are not wooden slats and have no rollers, springs, catches or latches. They do not have to be jerked for adjustment. And because they may be lowered from the top, allow a flood of soft light to reach the back of the room. Besides being practical, they are the most beautiful and attractive shade ever devised.

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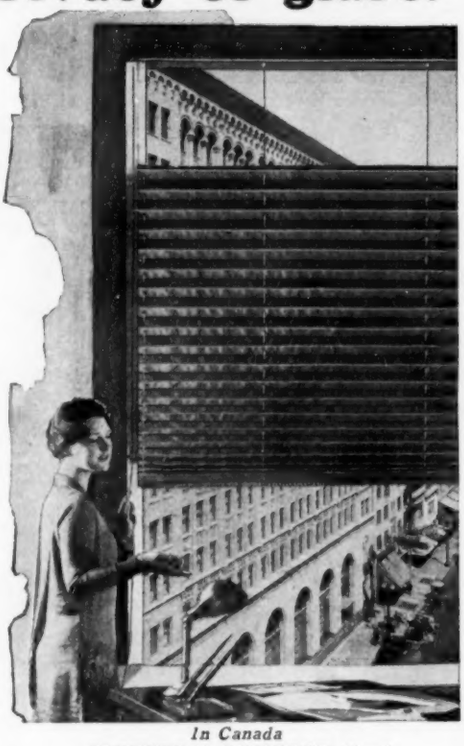

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in your neighborhood during the coming year. College students, office workers, housewives, teachers and many others are adding to their regular income by working evenings and spare hours. So can you!

Everybody is interested in health. Everybody can profit by the straightforward, scientific, fascinating health talks in **HYGEIA.** You will enjoy being the one to introduce them.

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I am interested in your offer to HYGEIA representatives. Send me full details about your proposition.

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TREATING LEPERS EARLY WILL ERADICATE DISEASE

Leprosy can be entirely stamped out in the province of Cebu, in the Philippine Islands, if incipient cases can be found and treatment begun before the disease has advanced too far. This is the prediction of Dr. Jose Rodriguez, who with Dr. H. Windsor Wade directs the battle against leprosy in these heavily infested areas.

Cebu has been one of the worst leprosy infested spots on earth. It has supplied more than a third of the population of the Culion leper colony ever since its foundation.

The policy of using force to apprehend lepers has been changed to the effort to encourage them to come voluntarily to the health authorities. Study of the disease through many years has revealed that there is a stage after a person has been infected with leprosy during which the germs lie inactive in the nerves and lymphatics. The person is not dangerous during this time, but the disease can be diagnosed and cured before it ever reaches the active stage.

Dr. Rodriguez, in a report published in the Red Cross *Courier,* recommended the establishment of regional dispensaries for the treatment of such incipient cases. This is the only way in which lepers in the early stages can be persuaded to come for treatment. Under such a policy the leper population will be gradually shifted from the colony at Culion to these stations and eventually the disease can be eliminated.

ANNUAL ACCIDENT TOLL INCREASES

Fatal accidents in the United States increased from 93,078 in 1927 to 96,000 in 1928, the National Safety Council reports.

There were 27,500 motor vehicle deaths and approximately 950,000 nonfatal automobile injuries during 1928. The cash cost of this enormous toll of automobiles approximates $900,000,000. About 58 per cent of the accidents occurred in the collision of motor vehicles with pedestrians, the report continues; and almost one third of the victims were under 15 years old.

There were 20,000 fatal accidents in public places not involving motor vehicles, such as drowning deaths, railroad accidents and firearm fatalities. Home tragedies amounted to 24,000 and an equal number occurred in industry.

Among the fatalities in American homes were 6,000 caused by burns, explosions and scalds; 4,000 through suffocation and asphyxiation, and 2,000 from poison.

LONGEST EPITAPH IS EULOGY OF A BERMUDA DOCTOR

Hidden in the cellar of an old house in St. George's, Bermuda, has been found a brass tomb tablet, dated 1778, and bearing what is probably the longest epitaph on record, and one of the most elaborate eulogies ever pronounced on a human being.

The tablet records the good works of a well known doctor, Dr. George Forbes, and reads as follows:

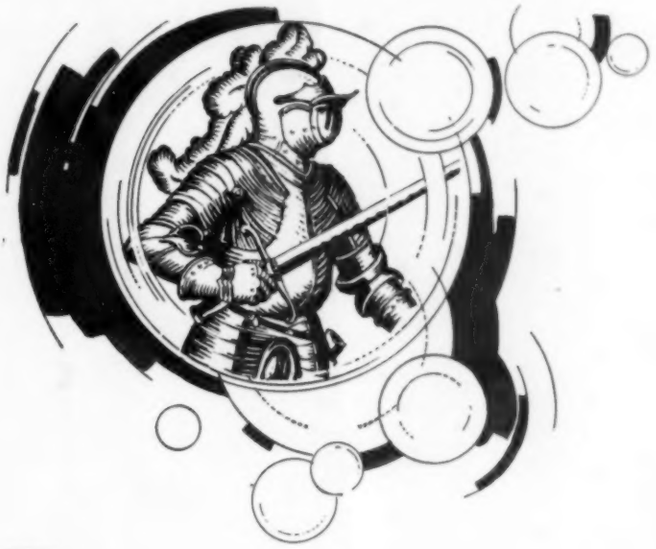
To the Memory
of
George Forbes, M. D.
Whom living
A singular complacency of manners
joined with many useful talents
and eminent virtues.
Render'd highly estimable
Blessed with a convivial disposition
In the cheerful hour of social festivity
He shone irreprehensible
And an agreeable companion
Ever assiduous in furthering good
humour and the enjoyments of
sociality friendly to mankind.
His endeavors to mitigate the evils of
life which he bore himself with temper
and philosophy were not alone
confined to the healing art.
Long exercised by him with much
reputation
But were likewise exerted
In composing differences
Restoring ancient friendships
interrupted
And promoting
Peace, harmony and mutual good
understanding
Among his fellow men
Having acquitted himself with
approbation
in the several relations of life
As he had lived, respected and beloved,
So he died.
Lamented and regretted for those
virtues
And many others
which
Tho' not enregistered on this tablet
are forever engraven
On the loving memory of his surviving
friends.
He died Jan'y 9th, 1778, aged 68 years.

The tablet will be placed in St. Peter's, the oldest church in Bermuda.—*Art World Magazine.*

FIRST MENTAL HYGIENE CONGRESS MEETS IN 1930

Plans are going forward steadily for an international congress on mental hygiene to be held in Washington, D. C., during the week of May 5 to 10, 1930, the committee on organization announces. President Hoover has accepted the honorary presidency of the congress.

Questions to be discussed will include the relation of mental hygiene to law, to hospitals, to education, industry, social work, delinquency, parenthood and community problems. Special emphasis will be given to the relatively new conception of mental hygiene as a movement to help conserve mental health in general and not merely the study of nervous and mental diseases. Diagnosis and treatment will be considered as well as the problems of administration of institutions and agencies.



Put on the armor of Cleanliness!

COAT of mail and sword could offer little protection against civilized man's deadliest foes . . . disease germs.

No! *Cleanliness* . . . simple, thorough-going cleanliness . . . is needed, among other protective measures.

Over 92% of the organisms causing communicable diseases enter the body through the mouth and nose . . . often carried there by hands or other objects which, due to lack of sufficient washing, have become germ-laden.

Cleanliness Institute's Department of Health Service has prepared two cleanliness lectures which are proving useful in driving home to people the health significance of cleanliness.

Health officials and workers are welcome to use them, on a loan basis. Communicate with the Department of Health Service.

CLEANLINESS INSTITUTE

Established to promote public welfare by teaching the value of cleanliness

45 EAST 17th ST., NEW YORK, N. Y.

Malted Nuts *may be served as a hot or cold beverage or sprinkled on fruits or cereals. Featured this month at all Health Food Centers*

Here's the way to *add healthy weight*

Underweight is a serious handicap. You have no reserve—always on the ragged edge. The least extra strain knocks you out. You need the cushioning effect of normal weight.

Malted Nuts is a wonderful food-drink that fills out the hollows. Builds up the vitality. Refreshes your system. Its nutriment sends rich red blood coursing through your veins. You don't need any scales to tell you the good news.

Mixed with water, Malted Nuts become a creamy milk-drink that agrees with everyone —hot or cold. Dry, it may be eaten with gusto a dozen different ways.

At the famous Battle Creek Sanitarium and in thousands of homes, Malted Nuts is served daily. Your Health Food Center—usually the leading grocer—has Malted Nuts and all the other health foods in the Battle Creek line.

BATTLE CREEK SANITARIUM HEALTH FOODS *for Everybody*

Free Diet Service

At Battle Creek we maintain a staff of graduate dietitians to advise you on any diet problem. If you will write to Ida Jean Kain, our chief dietitian, she will send you suggestions for your particular diet. "Healthful Living," a most interesting and helpful book written by a leading nutrition expert, will be sent free if you write your name and address on the margin of this ad and send it to us. It describes with recipes many of the foods used in the Battle Creek Diet System. THE BATTLE CREEK FOOD CO., Department 96 Battle Creek, Michigan.

Ask about Savita, Protose, Malted Nuts, Fig Bran, Vita-Wheat, and Bran Biscuit.

HEALTH PLAYS for CHILDREN

Six plays which previously appeared in HYGEIA are available in reprint pamphlet form.

The Good Health Elves.—17 to 25 characters. Set of 17 copies, $2.00. Single copies, 15 cents each.

The Trial of Jimmy Germ.—8 characters. Set of 8 copies, 35 cents. Single copies, 10 cents each.

The Friendly Brushes.—11 characters. Set of 11 copies, 50 cents. Single copies, 10 cents each.

From Danger Valley to Safety Hill.—32 to 45 characters. Single copy, 25 cents.

The Magic Fluid (Diphtheria Antitoxin).—8 characters, with chorus, "king's subjects," etc. Set of 8 copies, 35 cents. Single copies, 10 cents each.

On Board the S. S. Health.—20 characters; time, 10 minutes. Set of 20 copies, $1.00. Single copy, 10 cents.

HYGEIA

535 North Dearborn Street **CHICAGO**

UNDERNUTRITION IN CHINA

Famines in China quickly show that Chinese people are dangerously underfed, for a slight lowering of quantity and quality of food produces immediate disaster, Dr. William H. Adolph, professor of chemistry in Yenching University, Peiping, reports in the *Scientific Monthly*.

There has been too great a tendency on the part of China enthusiasts to compliment the people on their ability to live just within the fringe of animal existence, Dr. Adolph believes. Nutritional science today is interested in the optimum metabolism, not in mere existence, and the problem before the Chinese people is one of improved growth and vigor rather than mere maintenance of equilibrium, he observes.

The outstanding features of the Chinese diet are the high consumption of cereals, the absence of dairy products, the small amount of meat consumed and the low values for total protein.

Dr. Adolph calls attention to the fact that the common diseases in China are tuberculosis, beriberi, xerophthalmia, rickets and softening of the bones, most of which are nutritional disturbances.

By a sort of blind experimentation, the Chinese have tried using greens, sprouted soy beans, raw vegetables and short time cooking to supply vitamins and similar essentials, thus making the best of a bad situation. Climate and environment seem to have produced a temperament which accommodated itself to a low protein consumption and to a lowered metabolism generally. The fact remains, however, that undernutrition is widespread.

PAUL REVERE MADE FALSE TEETH

It may surprise some persons to learn that Paul Revere practiced dentistry, along with his other activities of silver smithing and horseback riding. Dr. Arthur D. Black quotes in the *Journal* of the American Dental Association an advertisement taken from the Boston Gazette for Aug. 29, 1768:

"Whereas many Persons are so unfortunate as to lose their Fore-Teeth by Accident and otherways, to their great Detriment, not only in Looks, but speaking both in Public and Private: This is to inform all such that they may have them replaced with false Ones; that looks as well as the Natural and answer the end of speaking to all Intents by Paul Revere, Goldsmith, near the Head of Dr. Clarke's Wharf, Boston."

PROVE DUST SHUTS OUT ULTRAVIOLET LIGHT

That dust in the atmosphere shuts out the health-giving ultraviolet rays of the sun is a well founded belief, according to three Baltimore investigators who reported to the *American Journal of Public Health* the results of experiments made in the city of Baltimore and in the country around it.

Cups to catch the settlings from the atmosphere were placed in the center of the city, in the near suburbs and in farms about 10 miles out in the country. Calculations from the contents of these cups showed that the total solids in the atmosphere for each of the three areas amounted to 1,800 tons per square mile per year in the city; 800 tons in the suburbs and only 340 tons in the country.

Then the amounts of ultraviolet light in each area were carefully measured and checked by several methods and it was found that the amount was 50 per cent greater in the country than in the city. Measurements made at the top of a tall city building showed that the amount of dust was materially less than at street level and there was more ultraviolet light.

In the course of the measurements of ultraviolet light on both clear and cloudy days it was found that skyshine yields about 70 per cent of the amount of ultraviolet light that is received through direct sunlight. This probably explains why it is possible to get a severe sunburn when it is cloudy.

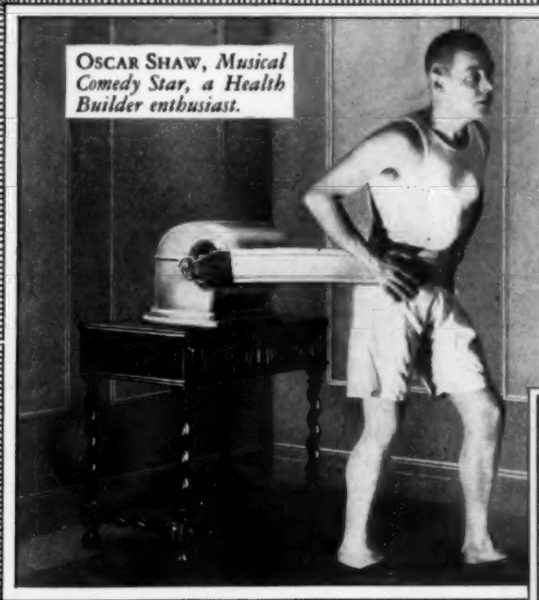
RUSSIA OPENS SUMMER CAMP FOR CHILDREN

For the first time in the history of Russia, the government has arranged a camp for children, which is described in a Russian magazine, *The Pioneer*.

The camp is located in the most picturesque part of Russian, Crimea, on a beautiful stretch of seashore and mountains, heavily wooded with cypress and olive trees. There are eleven tents as a beginning and the camp is conducted along the most modern methods of hygiene.

A central clubhouse contains a library, musical instruments, collections of butterflies, fishes and various kinds of stones and many games for indoor exercise on rainy days. The children are taken on many excursions into the surrounding country, where they learn the history and characteristics of Crimea. Thus the Soviet government plans not only to make its younger generation healthy and strong, but to teach the children, who come from all parts of Russia, as much as possible about their country.

KEEP FIT in 15 minutes a day



OSCAR SHAW, *Musical Comedy Star, a Health Builder enthusiast.*

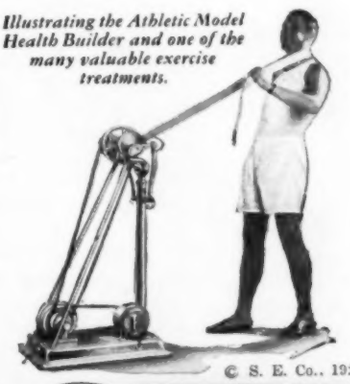
DOROTHY KNAPP, *world-famous beauty, says, "I unhesitatingly recommend the Health Builder to everyone interested in keeping radiantly healthy".*

NEVER before has health been so important an asset for business and social success as it is today. Never before has the pressure of modern living put such a strain on physical condition. You simply *must* KEEP FIT—without waste of time or effort.

Oscillate Your Way to Health

There is only *one* way to keep fit—DAILY physical exercise. Science now makes this possible, and in a most enjoyable, simple new way. Just 15 minutes a day of invigorating massage and vibratory-exercise with the famous Battle Creek Health Builder, manufactured under the patents of Dr. John Harvey Kellogg, awakens each tiny capillary into new activity, stimulates the perspiratory and sebaceous glands, vigorously massages the heaviest muscles, helps eliminate dangerous body poisons, and aids in general reduction of body weight.

Illustrating the Athletic Model Health Builder and one of the many valuable exercise treatments.



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The Result of Years of Development

No other appliance can produce the same effects as the Health Builder. Improved year by year, as a result of long study and research by an eminent physician, the action of the Health Builder is perfectly synchronized with human muscle tone.

A Health Builder for Every Requirement

Ideal for home use is the Universal Home Model, a compact, enclosed Health Builder. The Athletic Model is very popular for clubs, home gymnasiums, colleges, health centers, institutions, steamships, etc., while the handsome De Luxe Cabinet Models combine utility with distinctive beauty.

Health Facts for You—FREE!

Send at once for "Keeping Fit in Fifteen Minutes a Day"—a valuable FREE book showing how the Health Builder keeps you fit. Health should come *first!* Write for your copy—NOW!

Sanitarium Equipment Co.
Room AT-1857 Battle Creek, Mich.

Choice of 80,000 Because Medically Correct

The Battle Creek Health Builder Keeps You Fit!

Clapp's

ORIGINAL APPROVED

BABY SOUP

AND

STRAINED VEGETABLES

The Badge of Health Foods

In Sealed Glass Jars

For Infant Feeding

TO SUPPLEMENT THE MILK DIET

Prescribed by over 5,000 Specialists—

Because they are scientifically prepared under surgical standards of cleanliness and supply the elements needed for sound growth.

Used daily by thousands of Mothers—

Because they cost less than if made at home and save a Mother at least 24 hours a week kitchen time and give her these extra hours to be out of doors with baby.

Because they are easily carried, keep indefinitely when sealed, are ready to use except for diluting and heating and so are equally convenient for feedings at home or traveling.

Clapp's Baby Soup. An appetizing combination of Beef Juice, Vegetables and Cereals.

Clapp's Wheatheart Soup, a combination of Vegetables, Cereals, and the Wheat Germ which supplies Food Iron and VITAMINES A and E abundantly.

Clapp's Strained Vegetables

Spinach, Carrots, Asparagus, String Beans, Peas, Beets, Tomatoes, Prunes and Apricots.

Are all scientifically prepared from carefully selected materials, especially for growing babies and are immensely liked by them.

These are simply wholesome, healthful foods, packed for convenience and economy in 4 oz. glass jars—Soups, also in 14 oz. jars.

Ask Your Doctor

and write us for your Dealer's name

HAROLD H. CLAPP, Inc.

1340 University Ave., Rochester, N. Y.

DEDICATE OSLER LIBRARY AT McGILL

A medical library of 7,600 volumes bequeathed to McGill University in Montreal by Sir William Osler, famous physician and teacher, was recently dedicated with distinguished ceremonies.

As a young physician, Osler, an alumnus and long a teacher at McGill, spent more time and money than he could afford collecting scientific books, says *The Journal* of the American Medical Association. He continued to accumulate his library throughout his long career, which included teaching at the University of Pennsylvania and at Johns Hopkins University in the United States and at Oxford University in England. He spent many of his holidays browsing through old book shops in England searching especially to find fundamental contributions.

McGill University has provided a special room for the Osler library, with his own writings and those of his favorite authors arranged in an alcove at the end. Behind a panel bearing his portrait, as he desired, rest his remains.

The collection left to McGill did not include the whole of Osler's vast library. He left to Johns Hopkins a collection of works on the heart and lungs and another collection to the Tudor and Stuart Club, which was founded by Sir William and Lady Osler in memory of their son.

ILLINOIS ENACTS LAWS TO CONTROL SANITATION

Illinois municipalities, communities and individuals are henceforth prohibited from constructing or modifying sewer systems without permit from a state water board, according to a law adopted by the recently adjourned legislature of that state.

The statute created a water board which is invested with broad powers in the matter of preventing and correcting stream pollution. No sewers designed to empty into streams, lakes and ponds can be legally constructed or modified without the approval of this water board.

The new stream pollution law coupled with another statute requiring construction and operation of sewage treatment plants paves the way for bringing about and maintaining a reasonably high degree of sanitation of the water supplies of the state. The enforcement of these laws will promote wholesome recreation and sport and will preserve health, observes the bulletin of the state board of health.

CAMP TRADE MARK

Maternity Supports

Scientifically designed in types of models for all figures, gives low abdominal uplift with no constriction.

Special feature—Original patented adjustment supplying sacro-iliac support and easy regulation to size and pressure as required.

Wonderful reaction to normal health, and mental and physical buoyancy.

Write for special information.

S. H. Camp & Co.
Jackson, Mich.
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Fisher & Burpe, Ltd., Manufacturers for Canada
Winnipeg, Manitoba

For those wayward thumbs

This soft, pliable, kindly little binder, fastened gently to baby's active chubby arms, does **just what it is intended to do and no more**—keeps the thumb or finger from quite reaching the mouth, and does not hamper movements or play in any other direction. Children become immediately accustomed to it and it is a wholesome way to ward off the whole train of baby ills—facial deformities, respiratory and throat troubles—that come with the thumb-sucking habit. Help your baby—try a

BOWERS KANT-FAYL ANTI-FINGER SUCKING DEVICE

If your dealer cannot supply you, order from us. Per set, $3.00

Little Rock Surgical Company

Donahey Bldg. LITTLE ROCK, ARK.

FOOT SUFFERERS

Normal Foot

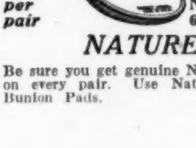
SOMETHING DIFFERENT

3rd Degree Flat Foot

New Invention Corrects Cause of Troubles, Nature's Way

Corns, callouses, bunions, Morton's toe, bump foot, weak ankles, fallen arches are almost invariably the result of overstrain and fatigue which forces the bones of the foot into an unnatural position. Nature-Treads gently but surely aid in adjusting the misplaced bones of the foot arches by distributing the body weight to the natural weight bearing portions of the foot—truly Nature's own way. Light, flexible leather and fiber—no metal or hard surfaces. Not arch supports.

Just slip Nature-Treads in your shoes and walk with a new feeling of comfort and freedom.



$3.00 per pair

Ask your nearest shoe dealer or send direct to us for illustrated circular and measurement chart (sent free if you send your shoe dealer's name). Clip this ad.

Nature-Tread Co. of Ill.
655 S. Wells St. Chicago, Ill.

NATURE-TREADS

Be sure you get genuine Nature-Treads—Name stamped on every pair. Use Nature-Tread Corn, Callous or Bunion Pads.

DIABETIC CHILDREN SPEND SUMMER IN CAMP

A summer camp for children with diabetes was successfully conducted under the direction of the children's diabetic clinic of Mt. Sinai Hospital in New York during the summer of 1928, according to a report recently published in *The Journal* of the American Medical Association.

Seven children from the outpatient department of the hospital were taken to a farm 70 miles from New York. The second floor of the farm house was equipped for sleeping quarters and a room was converted into a laboratory for urinalysis and for sterilizing insulin syringes. The camp was in charge of a dietitian trained in calculating diabetic diets and the children had the same diet and the same insulin dosage that they had had at home.

The general routine was as follows: 7:30 a. m., setting up exercises; 8:30, breakfast; 9 to 12, outdoor recreation; 12:30 p. m., luncheon; 1 to 3, rest; 3 to 4:30, swimming and bathing; 6, supper; 6:30 to 8, lawn games; 9, bed.

The camp was under the supervision of a physician, to whom reports were sent every day or two. Although he was called on the telephone in a few cases of emergency, it was not necessary for him to visit the camp except to observe the actual daily life of the diabetic children.

The stay in the country proved beneficial to the children. Some of them gained weight; some were able to reduce the dosage of insulin. Fully as important was the relief afforded to the homes from which the children came. They were from poor families in which the mother had numerous other duties. The camp had a double value, therefore, in relieving such mothers for a short while of a duty that would continue indefinitely, the report concluded.

INCOME FROM PETER PAN GOES TO HOSPITAL

Peter Pan, in stage, book and movie form, has delighted tens of thousands, children and elders alike. Now it is to serve directly in bringing health and life to children. Its gracious author, Sir James Barrie, has given over unconditionally to the Hospital for Sick Children in London all rights to royalties from this most charming of all plays about children. The gift will add something like $10,000 a year to the hospital's income, according to the announcement in the *Trained Nurse and Hospital Review*.

Headquarters of Commander Byrd's Expedition in "Little America," where the party will spend the Antarctic winter.

Photo copyright 1929 by the New York Times Co. and the St. Louis Post-Dispatch.

Above photograph presented to Mr. Frank L. H. Nason by Commander Byrd.

Nason's

Palatable-Norwegian

Cod Liver Oil

The Better-Tasting Kind

now in the Antarctic *with* Commander Byrd

Nason's palatable cod liver oil complies with the U. S. P. standard for cod liver oil. In addition, it is required to have a content of fat soluble vitamin A, determined by the U. S. P. method, of not less than 800 units per gram, and an antirachitic potency such that 0.01 Gm. per day will produce definite healing (as determined by x-ray photographs), in the leg bones of rachitic rats in eight days when added to a diet lacking in vitamin D, the rats being also deprived of ultraviolet light.

Send Coupon for Sample

Note the Vitamin Potency

TAILBY-NASON COMPANY
Kendall Square Station, Boston, Mass.
Pharmaceutical Manufacturers to the Professions of Medicine and Pharmacy since 1905.

Gentlemen:—You may send me (without charge) sample bottle of Nason's Palatable Cod Liver Oil.

Name .....

Address .....

My druggist's name.....(H.9-29)

Training the Baby

WELL grounded health habits established before a child is three, are the basis of sound health throughout life. *Early training to the toilet is most important*; a child should be taught to recognize and take care of his own needs at a very early age.

"TOIDEY" AND STEPS

When baby sits alone *(usually between fifth and eighth month)* he should begin to use the "Toidey" with Foot Rest. Baby's feet should always be supported, and knees elevated.

As baby walks, "Toidey" Steps prove a great stimulus in interesting him to climb to his "Toidey"; to brush his teeth, wash his hands, etc.; also help him attain balance, poise and co-ordination. He develops self-reliance and learns to do for himself.

"TOIDEY" STEPS

"Toideys" Fold for Carrying

During all the pre-school years baby should have his "Toidey" wherever he goes, *so that he may always associate the function of elimination with it.* This is important for the maintenance of regularity as well as for baby's comfort and safety.

Free To You!

This new authoritative, scientific and understandable booklet outlines just how to go about training baby and developing proper toilet habits. *Write for it or ask leading dealers.* Tells all about "Toideys" ($3 and $5) and "Toidey" Steps ($6). *Ask also about "Comfy-Safe" Auto Seat (not a toilet) which locks to car and allows baby to ride in safety and comfort and "see out." ($5.50).*

Juvenile Wood Products, Inc.
Gertrude A. Muller, Pres.
Box "Q" **Fort Wayne, Indiana**
A company devoted to the scientific study and production of training aids for the child.

U. S. P. H. S. REPORTS YEAR'S PROGRESS

Scientific studies prosecuted by the U. S. Public Health Service during the past year cover a variety of important topics, as shown by the report of Surgeon General Hugh S. Cumming recently submitted to Congress.

Screening against malarial mosquitoes was an important part of the research in malaria. How to screen the poorer classes of homes efficiently yet within the means of the population is a problem that has been studied in detail. Distribution of paris green over large areas by airplane was proved a valuable measure of protection against mosquitoes. New treatments for malaria were also studied intensively, with some success, the report said.

Dangers of numerous kinds of dust met with in industry have been investigated and a special study of respiratory diseases in industry yielded valuable information. Colds and other infections of the respiratory tract caused nearly half the time lost from work. The common cold accounted for 71 per cent of the total respiratory diseases lasting one day or longer. In records of sickness covering eight days or longer, influenza and grippe were most frequent.

An outstanding feature of the year's work was the success of a vaccine for Rocky Mountain spotted fever. The experimental work of the service furnished reasonably convincing evidence that the vaccine, which is prepared at the service laboratory in Hamilton, Mont., is valuable in preventing this disease and in moderating its severity in the cases that still occur.

Two important lines of research developed by service investigators of cancer have led to the promise that the work of the service on this problem will probably be expanded in the near future. One of these developments is in the use of electrical currents in treating animals afflicted with cancer, while the other consists of an ingenious method for measuring the growth of cells in living tissue.

The 14 and 15 year old who enters industry is immature in judgment, self-control, capacity for concentration, and therefore has less ability for sustained attention, is more easily distracted and more liable to accidents.

—Dr. Alice Hamilton.

Fatigue is the warning signal of a diminishing supply of energy. Sleep is the great restorer.

—William Frederick Book.

The Trowbridge Training School
A Home School for Nervous and Backward Children
The Best in the West
State Licensed
E. Haydn Trowbridge, M.D.
412 Chambers Bldg. Kansas City, Mo.

Apply Solutions With a Spray

THE application is so much more efficient, economical and convenient when you apply liquids to nose, throat and body surfaces with a DeVilbiss atomizer. Your doctor will endorse a DeVilbiss. Your druggist sells them.

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Atomizers - Nebulizers - Vaporizers

GOMCO
VEST POCKET SYRINGE
STERI-CASE
ESPECIALLY FOR THE DIABETIC
A compact Syringe carrying case assuring COMPLETE Syringe sterilization and a means of sterilizing the flesh.
AT ALL SURGICAL SUPPLY STORES
The GOLDSTEIN MFG. CO., Ltd.
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Stops Slipping—Falling in Bath Tub or Shower

Patented annular Vacuum cups molded in Footsure Safety Bath Tub Mat make it nonskid on the slippery surface. High grade, white, odorless rubber. A safeguard for everyone — especially expectant mothers, young children, invalids and the elderly. Many use two mats—one in the tub, the other on tile floor.

Price $2.95 at leading Department, House Furnishings and Hardware stores throughout the nation. Circular Free. **Footsure Company, M-20, 407 East Pico St., Los Angeles, Calif.**

FOOTSURE *Safety* BATH TUB MAT

If Your Child Could Explain to You

what helps him to behave rightly, you would never have a moment's trouble with him. Reading this sane, pleasant little booklet by two trained specialists is almost the same thing!

"Training the Child to Obey"
by Smiley Blanton and Margaret Gray Blanton

15c *Paper Cover, 22 pages*
AMERICAN MEDICAL ASSOCIATION
535 N. Dearborn St., Chicago

LAUNCHING HIGH SCHOOL HEALTH PROGRAMS

Health programs for high schools are among the outstanding needs in health education at present. Those who study the problem are agreed, however, that the individual high school must work out the problem for itself. A ready-made program cannot be brought in from the outside and expected to function. The National Tuberculosis Association is developing a procedure for helping a high school to recognize its needs and to act on the knowledge, the bulletin announces.

The first step is to interest school officials. A health examination for all students and a careful analysis of the findings follow, and to this is added an analysis of the principal causes of absence.

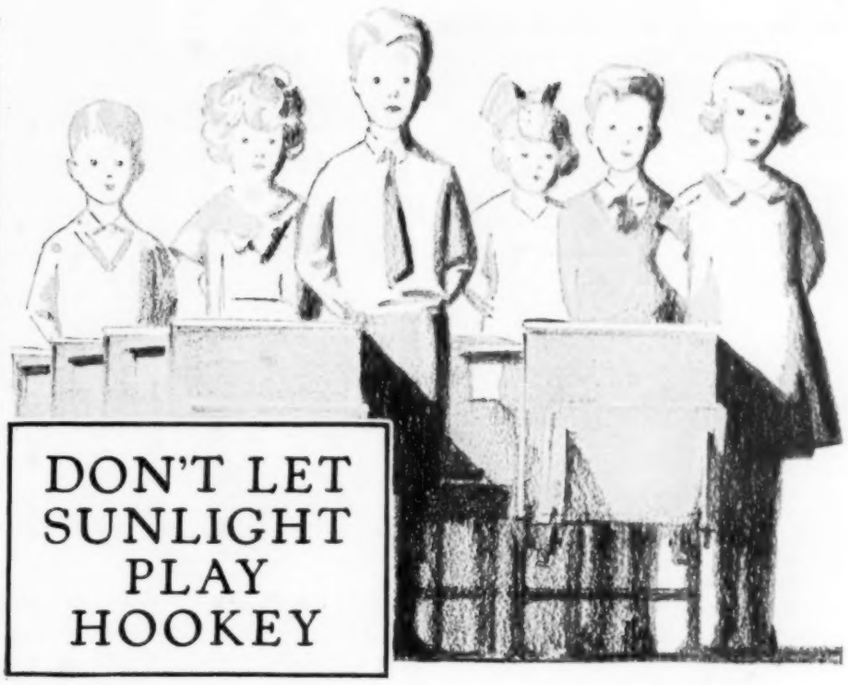
After these statistics are obtained, the school health consultant meets with the whole faculty, requesting from them their observations on the health needs of the school and the students. A series of talks to the student body is followed by a questionnaire addressed to students. It has been found possible to get this cooperation from students through the English department, which gives assignments asking for statements of the health needs of the homes, the school and the community.

The logical results of this procedure have been the formation of a permanent faculty health committee and a student health council in the school and the establishment of an efficient health service.

DANGERS OF EATING RAW PORK

A story of a 15 year old girl in St. Louis who refused to eat raw pork because she had been taught in school that it was dangerous is told by the *Illinois Health Messenger* as an example of the value of health education. The girl was the only member of the party who did not become seriously ill. Her father died because he would not heed her warning that he might contract trichinosis.

Trichinosis is a disease caused by trichinae, which are parasites that are occasionally found in pigs. Although only 1 or 2 per cent of pigs are infested, according to the U. S. Department of Agriculture, almost any pork may contain them and it is foolish to take even a small chance on a disease for which no dependable treatment is known. If the parasites get into the body, they are carried into the blood stream, lodging in muscles and causing severe pains and swellings. Death often results after about a month.



DON'T LET SUNLIGHT PLAY HOOKEY

WHEN the children are marshalled into the schoolroom, make sure that their best playmate is there along with them—*whole* sunlight. Sunlight unshorn of its vital ultra-violet rays—those powerful rays, which, though invisible to sight, build and protect health; the rays whose presence is indicated by the tanning of the skin.

Let those precious rays indoors—freely—through windows glazed with Helioglass! For, unlike ordinary window glass, Helioglass, made by a special formula and process, has the quality of *transmitting* the sun's vital ultra-violet rays, instead of absorbing them.

Many schools now use this health-promoting glass for classroom windows. And it is available, too, for everyday homes. Find out how comparatively inexpensive—for the great benefits it will bring—is the cost of glazing your sun-porch or nursery with Helioglass.

PITTSBURGH PLATE GLASS COMPANY
PITTSBURGH, PA.

Warehouses in Every Principal City of the United States

"HELIOGLASS FOR HEALTH" *is a free folder telling all about this modern method of conserving health. Send for a copy.*

HELIOGLASS
AN ULTRA-VIOLET RAY GLASS

RINGWORM SPREADS WHEN SANITATION IS POOR

Striking evidence of the relation of personal and gymnasium hygiene to the prevalence of ringworm of the feet among students is brought out by a study reported in *The Journal* of the American Medical Association by investigators at the University of California.

Examination of 3,100 freshmen at entrance showed that 53.3 per cent of the men and 15.3 per cent of the women were infected, showing that the disease was common among preparatory school students.

At the end of the spring semester another survey was made of 1,000 men and 997 women. It was determined that 78.6 per cent of the men and 17.3 per cent of the women had ringworm.

Two reasons for the discrepancy between the increase in men and that for the women were given. Women at the University were using a new gymnasium equipped with every known sanitary device, where no one was permitted to walk with bare feet on the floors of showers or runways leading to the swimming pool. The men on the other hand, used an old gymnasium with inferior sanitary facilities and constantly walked about in their bare feet.

Another reason advanced was that the women practiced more careful personal hygiene. They perspire less than men and wear lighter shoes, which are better ventilated and changed oftener.

These results led the authors to advise that one should never permit the bare feet to touch the floor in any gymnasium, shower bath or runway to swimming pools. One should be equally careful about wearing sanitary gymnasium clothes and in the use of towels.

HELPING THE BABY ENJOY HIS MILK

To force a child to drink milk while tears drop from his eyes only creates a greater aversion to the milk, observes Alice M. Deist in the Los Angeles *Health News*. She suggests that happy associations can most quickly overcome the dislike of the occasional child for milk.

Sometimes playing tea party with milk for tea or drinking milk "while kitty drinks hers" or a new cup or a pretty glass into which the child may pour his own milk may bring about a pleasant association that will offset antagonism. One mother pasted pictures on the bottom of the child's drinking glasses as an incentive for him to drain his glass of milk to see the picture.

Mother
protect your baby
from loose pins and buttons

The Vanta Baby Copyright 1925 Earnshaw Knitting Co.

For sake of safety, comfort, convenience, health, dress him FOR THE FIRST TWO YEARS, in the way recommended by doctors, nurses, millions of mothers—in

Vanta
Baby Garments
No Pins No Buttons

SAFETY—because there are no pins to come unfastened or buttons to turn edgewise and torment little bodies. Your baby can never put a pin or button in his mouth. They keep baby safe from harm.

COMFORT—because they tie just right with dainty bows of twistless tape—neither too tight nor too loose. Adjustable as baby grows.

CONVENIENCE—because they dress baby without turning and twisting that makes him so tired and cross.

HEALTH—because doctors recommend their perfect protection of little bodies in all kinds of weather.

VEST

QUALITY—only the best—for your baby. Guaranteed non-shrinkable. Stores will make adjustment if any Vanta garment is not satisfactory.

In cotton, wool, silk, linen mesh, sase and rayon; in light or heavy weights as your doctor prescribes. Sizes to six years.

ABDOMINAL BAND

Ask for Vanta Baby garments at your store. If you cannot get them, write to EARNSHAW SALES CO., INC., Dept. 1201, Newton, Mass.

FREE TO YOU

Vanta Pattern, also "Baby's Outfit," a book of 64 pages on care and dressing of babies.

Earnshaw Sales Co., Inc.
Dept. 1201, Newton, Mass.
Send free pattern and full instructions for making the new Vanta square-fold, pinless diaper. Also Baby's Outfit book and illustrated catalog, all in plain envelope.

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WARNS OF HEART DISEASE IN CHILDREN

Statistics showing that more children between the ages of 10 and 14 died from heart disease than from any other disease prompted Dr. Jacob M. Cahan, medical inspector of the public schools of Philadelphia, to make a survey of ten public schools with a student body of more than 10,000. Dr. Cahan has recently published the results of this study in *The Journal* of the American Medical Association.

Slightly less than 1 per cent of the children, or ninety-four, were found to have some degree of heart involvement. Of these, nine had congenital defects and the remainder had acquired the disease. In seventy-nine cases the beginning of the trouble was traced to the rheumatic group of diseases, namely, frequent attacks of "growing pains," tonsillitis, pharyngitis, chorea or acute rheumatic fever.

Dr. Cahan points out that thorough periodic health examination would in the majority of cases discover these heart defects in their inception. Once it is known that a child is developing heart disease any focus of infection may be eradicated without delay. The author believes that school children are frequently neglected medically until something seems wrong with them or something hurts them. He urges the periodic health examination, as one of the best aids to checking the menace of heart disease.

BEDDING MAY NOT BE WHAT IT SEEMS

Housekeepers should investigate the origin of articles of bedding before buying them, the health department of Maryland suggests in its bulletin.

Bedding offers excellent opportunities for the unscrupulous manufacturer to substitute shoddy and unclean material for the proper kind. Vegetable fiber labeled hair, chopped chicken feathers called down, even chunks of dirt swept into the fillings of expensively covered articles have been found by inspectors under the state bedding law, the bulletin says.

In one plant described the inspectors found that the stock from which a large number of mattresses and pillows were to be made, consisted of a number of second hand mattresses, pillows and feather beds bought from a rag dealer, evidently salvaged from garbage piles and all of it heavily infested with vermin. Fortunately for the health and comfort of the prospective purchasers, this stuff was discovered in time and destroyed.